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Portuguese physiotherapists' self-efficacy and preparedness for patient education practice

A mixed methods study

Dissertação de Mestrado em Fisioterapia

Relatório de Projeto de Investigação

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Relatório do Projeto de Investigação apresentado para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Fisioterapia, área de especialização em Fisioterapia em Condições Músculo-Esqueléticas realizada sob a orientação científica da Professora Doutora Carmen Caeiro e coorientação da Professora Doutora Roma Forbes

Declaro que este Relatório de Projeto de Investigação é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

O candidato,

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Declaro que este Relatório de Projeto de Investigação se encontra em condições de ser apresentado a provas públicas.

A orientadora,

Professora Doutora Carmen Caeiro

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RESUMO

Autoeficácia e preparação dos fisioterapeutas portugueses para implementação de educação, enquanto modalidade terapêutica utilizada no tratamento em utentes com condições músculo-esqueléticas: estudo de métodos mistos

Diogo Santos, Roma Forbes e Carmen Caeiro

Introdução: A educação centrada no utente é reconhecida como parte integrante da prática efetiva em fisioterapia. A literatura atual sugere que os fisioterapeutas recém-licenciados, que intervêm com utentes com condições músculo-esqueléticas, podem não estar adequadamente preparados para implementar esta modalidade de intervenção de forma efetiva. Estes profissionais tendem a identificar mais barreiras e desafios, comparativamente aos fisioterapeutas mais experientes.

Objetivos: O objetivo deste estudo foi analisar a autoeficácia e explorar a preparação de fisioterapeutas recém-licenciados para utilizar a educação, enquanto modalidade terapêutica integrada no tratamento de utentes com condições músculo-esqueléticas.

Metodologia: Foi implementado um estudo misto sequencial explanatório, que combinou métodos quantitativos (1ª fase) e métodos qualitativos (2ª fase). Na 1ª fase, os participantes responderam a um questionário relativo à autoeficácia para uma prática de educação ao utente. Na 2ª fase, foram realizadas entrevistas individuais, semiestruturadas, gravadas em formato áudio. Os dados foram transcritos na íntegra, para posterior análise temática.

Resultados: 151 fisioterapeutas recém-licenciados participaram na 1ª fase. Os itens que obtiveram a pontuação de autoeficácia mais alta foram: "Compreendo o papel da educação ao utente" e "Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente". O item com a pontuação mais baixa foi: "Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação". Na 2ª fase do estudo, foram realizadas 12 entrevistas. Na análise qualitativa foram identificados quatro temas: (1) perspetivas acerca da prática de educação ao utente, (2) desafios em torno da prática de educação ao utente, (3) preparação para uma prática de educação ao utente, e (4) reflexões sobre a formação base.

Conclusões: Os participantes demonstraram níveis elevados de autoeficácia na maioria dos itens para a educação ao utente. A análise das entrevistas evidenciou dificuldades em gerir barreiras no uso da educação ao utente e na abordagem de condições clínicas complexas. Os participantes perceberam que a sua formação base poderá não ter sido suficiente para a preparação para a prática de educação ao utente. Uma abordagem mais aprofundada da educação ao utente e o contacto com utentes reais foram vistas como experiências de aprendizagem com potencial para aumentar a perceção de preparação para uma prática de educação ao utente.

Palavras-chave: educação centrada no utente; autoeficácia; preparação; fisioterapeutas recém-licenciados

ABSTRACT

Portuguese physiotherapists' self-efficacy and preparedness for patient education practice: a mixed methods study

Diogo Santos, Roma Forbes and Carmen Caeiro

Background: Patient-centred education is recognized as an integral part of effective physiotherapy practice. Current literature suggests that novice physiotherapists, working with patients with musculoskeletal conditions, may not be adequately prepared for patient education practice. They seem to identify more barriers to effective patient education practice, than their experienced colleagues.

Objectives: This study aims to examine the self-efficacy of Portuguese novice physiotherapists for patient education practice and to explore their perceived preparedness to use patient education practice in their work context and the impact of their pre-professional training.

Methods: An explanatory sequential mixed methods research design was used, combining quantitative (1st phase) and qualitative (2nd phase) methods. In the 1st phase, participants completed a self-efficacy survey regarding their patient education practice. In the 2nd phase, qualitative data collection was carried out through one-to-one, semi-structured interviews. The interviews were recorded in audio format and the data transcribed verbatim for subsequent thematic analysis.

Results: 151 novice physiotherapists participated in the 1st phase. The items with the highest score were: "I understand the role of patient education" and "I understand the impact of social, cultural, and behavioral variables on patient learning". The item with the lowest self-efficacy score was "I feel confident to recognise and effectively manage barriers to effective education". In the 2nd phase, 12 interviews were completed. Four themes were generated: (1) perspectives of patient education practice, (2) challenges around patient education practice, (3) preparedness for patient education practice, and (4) reflections on pre-professional training.

Conclusion: Novice physiotherapists demonstrated high self-efficacy in most aspects of patient education. Interview analysis showed difficulties in managing barriers to use patient education practice and in addressing complex conditions. Participants perceived that their undergraduate training may not have been sufficient to prepare them for patient education practice. A more in-depth approach to patient education and contact with real patients were seen as learning experiences with the potential to improve the perception of preparation for patient education practice.

Keywords: patient-centred education; self-efficacy; preparedness; novice physiotherapists

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ABBREVIATION LIST

ESS-IPS – Setúbal Polytechnic Institute - School of Health Care

PESES – Patient Education Self-Efficacy Scale

1. Introduction

1.1. Patient education

Patient education is defined as “a planned learning experience using a combination of methods such as teaching, counselling and behaviour modification techniques which influence patients’ knowledge and health behaviour” (Bartlett, 1985, p. 323-324). Patient education is an integral component of effective patient care and inherent to evidence-informed practice and is highly valued by physiotherapists and patients (Cooper et al., 2008; Wijma et al., 2017). Specifically in the musculoskeletal context, patient education is consistently recommended as an integral practice in the management of these conditions, especially in promoting self-management and information about the condition, prognosis and addressing psychosocial aspects (Bannuru et al., 2019; Corp et al., 2021; Lin et al., 2020; Wallis et al., 2021). In addition to these recommendations, patient education also has the potential to enhance outcomes related to pain and disability for individuals with chronic musculoskeletal pain conditions (Louw et al., 2011).

Despite recommendations for patient education use, uncertainty remains regarding the effectiveness of patient education on pain and function outcomes. Wood and Hendrick (2019) and Watson et al. (2019), in two different systematic reviews and meta-analyses that aimed to assess the effectiveness of pain neuroscience education in patients with chronic low back pain and chronic musculoskeletal pain, respectively, reported that despite the small clinical benefit in terms of pain and disability, the overall pooled results were not clinically significant. Nevertheless, patient education may be used to address psychological and social factors, such as misconceptions about pain or exercise. People with persistent musculoskeletal pain frequently believe that pain is a sign of tissue damage or structural abnormality, and that exercise can be harmful (Leake et al., 2021; Smith et al., 2018; Toye & Barker, 2012). Educational interventions that aim to address these beliefs in people with chronic musculoskeletal pain have been demonstrated to reduce the increased risk of poor outcomes, facilitate the ability to cope, and promote clinically significant

results in kinesiophobia and pain catastrophizing (Leake et al., 2021; Watson et al., 2019).

Within contemporary healthcare practice, it is integral to note that patient education is not “simply” informing patients. The paradigm regarding patient education has shifted from a professional-centred perspective, where the patient’s role was viewed as passive, to a patient-centred approach, where patients are active and engaged in making decisions regarding their treatment goals, options and changes related to healthcare (Hoving et al., 2010; Syx, 2008).

The focus on a patient-centred approach has been increasing in healthcare systems, practice, and research within the previous past decade, partly due to the growing incidence and prevalence of chronic diseases and complex medical conditions (Cheng et al., 2016; Wijma et al., 2017). Patient-centred care becomes particularly important given its potential to address several challenges in healthcare, including minimising the gap between the world of medicine and the world of the patient (Ahlsen et al., 2020; Wijma et al., 2017). Even though definitions of patient-centred care lack clear consensus, this model of practice can be viewed as an approach which aims to understand the patient as an autonomous human being with individual experiences and needs, ensuring that patient values guide all clinical decisions, making them meaningful and valuable to the individual (Ahlsen et al., 2020; Cheng et al., 2016; Hansen, Præstegaard, Lehn-christiansen, 2021). Wijma et al. (2017) outlined that patient-centeredness in physiotherapy can be viewed as a framework with multiple facets, including: individualized treatment; education in all aspects of treatment; patient-defined goals; and support and empowerment of the patient.

From the patient perspective, the literature indicates that patients value educational content that is focused on their problems, compatible with their reality and perceptions, and also meaningful to them, where an explanation makes sense and helps them to preserve a sense of control of their lives (Bernhardsson, Larsson, Johansson, & Öberg, 2017; Caeiro, Moore, & Price, 2021; Kidd, Bond, & Bell, 2011; Trede, 2000). Furthermore, patients seek clear explanations and be actively

involved in decision making regarding their care (Caeiro et al., 2021; Cooper et al., 2008; Grenfell & Soundy, 2022). This implies that physiotherapists' skills to effectively educate patients should also contain focus on self-management strategies and empowerment (Barber et al., 2022; Cooper et al., 2008; Kidd et al., 2011; Trede, 2000).

1.2. Context of patient education in physiotherapists' clinical practice

Providing health information to a patient is the act by which a health professional communicates all relevant clinical facts to a patient about their health condition, which can include data about the nature of the condition, symptoms, diagnosis, and treatment options, for example (World Health Organization [WHO], 1998; Rabbone, De Vito, Sacchetti, & Cerutti, 2005). Patient-centred education is a more complex process. The provider must create an environment that promotes learning, communicates with the patient, establishes the right context for education, and addresses potential learning challenges. Thus, patient-centred education demands knowledge on managing health conditions and a robust understanding of the principles of teaching and learning geared toward the specific needs of patients and their decisional needs (Jotterand, Amodio, & Elger, 2016).

Patient-centred care is being recognized as a key competency of practice in physiotherapy across different countries and regions (American Physical Therapy Association [APTA], 2012; Vital, Castro, Almeida, & Cruz, 2020; World Confederation for Physical Therapy [WCPT], 2011). In practice, physiotherapists often have the opportunity to spend longer time with patients than other health professionals and, thus, are considered in a better position to promote individualised patient education (Ross & Haidet, 2011). Forbes, Mandrusiak, Russel, and Smith (2017a), in a study that aimed to evaluate physiotherapists' practice of patient education in Australia, reported that approximately 30% of physiotherapy consultation time is dedicated to patient education. Concerning the Portuguese context, Balluchi, Caeiro, and Forbes (2021), conducted a study aiming to characterize the perception and use of patient education use within the context of chronic low back pain, which found similar results. Of the 112 participants, 42% and

31% of participants reported spending between 6-15 minutes or 16-30 minutes on patient education activities within the initial session, respectively. In subsequent sessions, 6-15 minutes of patient education was the most commonly reported time spent on educational activities, representing 56.3% of responses (Balluchi, Caeiro, & Forbes, 2021).

Both of these studies have also sought to characterise education practice by taking into account the frequency of patient education content and approaches. In the context of physiotherapy practice in Australia, the research conducted by Forbes et al. (2017a), found that over 90% of participants reported that education relating to the use of exercise or diagnostic-related content was frequent in their practice. Additionally, physical demonstration and one-to-one discussion were reported as the most frequent approaches to conducting patient education. Balluchi et al. (2021), aiming to characterise the practice of education in the context of physiotherapy in Portugal, showed that teaching or counselling self-management strategies are the most frequently reported content (89.3%), followed by exercise-related content (85.7%), corroborating the previously mentioned results. Regarding the approaches used, the one-to-one discussion (79.4%) and the physical demonstration of exercise (93.7%) were also reported as the most frequent, within the Portuguese context.

National accreditation requirements and graduate standards of entry-level, doctoral, and advanced practice within the United States of America (APTA, 2012), United Kingdom (Chartered Society of Physiotherapy [CSP], 2019), Australia and New Zealand (Physiotherapy Board of Australia & Physiotherapy Board of New Zealand, 2015) and Portugal (Vital et al., 2020), include patient education as a broad competency for pre-professional and professional programs and graduates. Despite this recognition, the necessary specific competencies that physiotherapists should possess or acquire for patient education practice are still lacking consensus. Forbes, Mandrusiak, Russel, and Smith (2018a) sought to address this gap by conducting a study, using a Delphi consensus approach, with specialist physiotherapists, that sought to develop specific competencies for physiotherapists in patient education. The authors found that activities consistent with patient-centred practice were evident throughout the final competency list, including tailoring educational content,

language and materials as well seeking and addressing the patient's perceptions and concerns. Another major theme identified was communication, which has been considered the cornerstone of effective patient education, with a positive impact on patient adherence, satisfaction and effective self-management when used effectively (Chewning et al., 2012). The items specifically reported for this competency included the use of questioning, effectively explaining the patient's condition and summarizing information for them (Forbes, Mandrusiak, Smith, & Russell, 2018a). These competencies which provide more detail of the specific skills and knowledge physiotherapists should possess, have provided a framework for training physiotherapy students (Forbes, Mandrusiak, Smith, & Russell, 2017b) and assessment tools to evaluate physiotherapist performance of patient education (Forbes & Mandrusiak, 2018).

Considering the prevalence and value of patient education in physiotherapy practice, established competencies provide: a basis for future research which may include exploring student and new-graduate self-efficacy and identity in this area (Forbes et al., 2018a), as they would provide and promote professional physiotherapy preparation; criteria for assessment; a foundation for curricula in the area of patient education skills training. Concerning the Australian context, experiences during undergraduate training are known to be important in developing confidence in patient education practice, with direct practice, observation and feedback being the most significant influences on the ability to perform this practice (Forbes, Mandrusiak, Smith, & Russel, 2018c). However, in Portugal, physiotherapy curricula vary, and there is little research on how training experiences prepare physiotherapists for an educational practice, thus highlighting the need for research in this area.

1.3. Challenges in physiotherapists' clinical practice

Several challenges and barriers have been reported in applying patient-centred education in practice. The most frequently reported barriers by physiotherapists, which seem to be transversal to different countries and contexts, are related to patient characteristics, mainly at the level of attitude and expectations towards

physiotherapy, rather than due to their practice or skills (Chase, Elkin, Readinger, Shepard, & J'May, 1993; Forbes, et al., 2017a). Furthermore, over the last few years, it has been consistently found that novice physiotherapists report greater difficulties and barriers compared to more experienced physiotherapists. Early studies have reported that novice physiotherapists place less importance on patient education than on other clinical skills and often fail to apply educational approaches that promote patient responsibility (Jensen, Shepard, & Hack, 1990). Recent studies corroborate these results showing that novice physiotherapists report lower use of patient-centred techniques and recognize difficulties in prioritising and individualising educational content to the patient (Forbes et al., 2017b; Svavarsdóttir, Sigurardóttir, & Steinsbekk, 2016).

Forbes et al. (2017b) sought to compare novice and experienced physiotherapists use of patient education. They reported that novice physiotherapists identify more difficulties and are more affected by perceived barriers than experienced colleagues when providing education. These barriers were mainly related to characteristics of the patient, such as cognitive status, emotional status, and attitude toward physiotherapy. These barriers were also reported to be the main perceived barriers of Portuguese physiotherapists (Balluchi et al., 2021). Additionally, when comparing novice and non-novice Portuguese physiotherapists, the novice group reported a higher frequency of some barriers, such as a lack of time allocated for treatment sessions; lack of knowledge to assess and address psychosocial aspects, lack of privacy in the clinical environment, and difficulties in using education strategies (Balluchi et al., 2021). With a specific focus on Australian new-graduate physiotherapists, Wilesmith, Lao, and Forbes (2020), in a mixed-methods study, highlighted that despite high self-efficacy and perceived preparedness for numerous aspects of patient education, new-graduate physiotherapists consistently identified patient-related barriers to education such as communication, impaired cognition, and pre-existing health beliefs as barriers to their effective practice.

Little is known about how Portuguese novice physiotherapists identify barriers, what strategies are used to minimise them, and their subsequent effect on educational approaches. Therefore, in light of advances in physiotherapy practice and

education, research on preparedness for patient education practice is important as it can play a key role in developing strategies to engage physiotherapy professionals and students in effective patient education practice.

1.4. Patient education self-efficacy

To understand how new graduates can better engage in patient education practice, self-efficacy is an important construct. Self-efficacy was defined by Bandura (1977) as individual's beliefs about their capabilities to successfully perform a particular task or behaviour, that influence how people feel, think, behave and motivate themselves in performing tasks. An individual's self-efficacy may be influenced positively or negatively by a variety of factors. Bandura summarized those factors as three main sources: performance mastery, vicarious experiences, and verbal or social persuasion from others. The first is related with direct practice and successful completion of a task where individuals are more likely to believe they can do something if they have done it well in the past. The second is related with the observation and modelling of others, such as peers. The third, which is widely used in academic settings, is related to aid students' beliefs regarding their ability to cope with challenging tasks or situations (Bandura, 1977, 1997).

In the healthcare context, self-efficacy is an important construct in understanding how health professionals engage in professional practice, as it influences motivation and skill attainment and is predictive of clinical performance (Jones & Sheppard, 2011). It has been shown that health professionals, including physiotherapists, may not effectively engage in patient education when they lack the self-efficacy to use it in practice (Forbes et al., 2018c; Svavarsdóttir, Sigurardóttir, & Steinsbekk, 2015). Forbes et al. (2018) took the first steps to explore the self-efficacy of physiotherapy students relating to patient education. The authors conducted a study that aimed to investigate new-graduate physiotherapists' self-efficacy across patient education competencies and to explore the relationship between self-efficacy – based on Bandura's main information sources – and six specific entry-level training experiences. These included performing patient education during clinical placements, simulation or with peers; observation of a peer, clinician, or teacher; or

receiving feedback. The authors found that despite most participants reporting a high level of self-efficacy about patient education, nearly half indicated that they were not confident in their ability to identify and manage barriers. Furthermore, new-graduate physiotherapists who reported having all three of these major sources of experience during their entry-level training had significantly higher patient education self-efficacy scores than those who did not undertake all six experiences (Forbes et al., 2018b). More recently, Wilesmith et al. (2020), corroborated these results. Although novice physiotherapists demonstrated high self-efficacy for most aspects of patient education, they experienced difficulties in overcoming barriers to patient education, especially when faced with complex situations.

1.5. The transition from student to new graduate

Across a range of health professionals, including physiotherapists, nurses, doctors, and occupational therapists, the transition from student to new graduate is challenging (Merga, 2016). This challenge is characterized by the transition from a university environment, that focuses on individual learning and skill development, to a professional environment, where the primary focus is the delivery and responsibility of providing patient care (Stoikov et al., 2020). Duchscher (2008, 2009), who has been studying the new graduate nursing transition for several years, identified a transition 'shock' that refers to the first 12 months of professional activity, where nursing new graduates often realized their lack of preparedness, knowledge, and skills. The underlying premise is the relative contrast between the relationships, roles, responsibilities, knowledge, and performance expectations required within the academic environment with those required in the professional practice setting (Windey & Duchscher, 2018). Within the physiotherapy context, the perception of being underprepared for professional practice has been also reported in the literature (Jones, McIntyre, & Naylor, 2010), mainly due to increases in caseloads and complex conditions, as well as practice expectations (Merga, 2016; Stoikov et al., 2020). The increased complexity of patients has been associated with the presence of concomitant psychosocial factors, with physiotherapists reporting difficulties to incorporate cognitive, psychological, and social factors into their management of patients with chronic pain (Forbes & Ingram, 2019; Stoikov et al.,

2020; Synnott et al., 2015). Previous research found that physiotherapy entry-level programs and pre-professional training may not provide the requisite skills to feel confident and prepared for practice (Forbes & Ingram, 2019; Synnott et al., 2015). Additionally, Forbes and Ingram (2019), reported that direct experience and workplace support are strongly associated with the perceived preparedness of novice physiotherapists.

Regarding patient education, the results from Wilesmith et al. (2020) study, showed that despite the high levels of self-efficacy and perceived preparedness for most aspects of patient education, novice physiotherapists experience difficulties and challenges when delivering patient education in complex situations. These results suggest that lack of preparedness for patient education practice may arise from insufficient preparation during their entry-level program, which may not prepare graduates for all competencies for this practice, as consistent with previous research (Forbes et al., 2017a). From the perspective of new graduates, pre-professional training, such as experiential learning and clinical experiences, are perceived as highly valuable and powerful in shaping the perception to use patient education in practice (Forbes et al., 2018b; Wilesmith et al., 2020). These training approaches represent opportunities for performance mastery and observational learning, which are factors that positively influence self-efficacy (Bandura, 1997). Furthermore, new graduates attribute their skill development to social influences within the workplace in guiding their decision-making (Zou, Almond, & Forbes, 2021), and recognise the importance of peer support. Novice physiotherapists also have identified several personal skills which, if more developed, may have assisted their transition to new graduate practice (Stoikov et al., 2020), which could potentially enhance self-efficacy regarding patient education practice.

Understanding and supporting new graduates' needs may contribute to their successful transition into the workplace (Zou et al., 2021), and subsequently promote effective patient education practice (Forbes et al., 2017a; Wilesmith et al., 2020). However, little research has been conducted to evaluate and explore novice physiotherapists' self-efficacy and preparedness for patient education practice outside the Australian setting, especially focusing on the impact of their pre-

professional training for musculoskeletal physiotherapy practice. This study aimed to examine the self-efficacy of Portuguese novice physiotherapists for patient education practice and to explore their perceived preparedness to use a patient education practice in their work context and the impact of their pre-professional training.

2. Methodology

2.1. Study context

This study was carried out in Portugal, where there are, currently, 22 institutions providing undergraduate physiotherapy courses. In the Portuguese context, undergraduate education is the responsibility of higher education institutions, authorized by the government. Each program (four-year length) has the flexibility to establish the graduate profile, adjust the relative amount of time-spent teaching in each subject or make decisions about the pedagogical approaches to delivery of the curriculum.

In order to enter professional practice, Portuguese physiotherapists need to register in the Order of Physiotherapists/Physiotherapy Board (Ordem dos Fisioterapeutas). Once this process is completed, physiotherapists can start practising autonomously. There is no need for initial supervision by more experienced colleague (Vital et al., 2020).

2.2. Study design

This study followed an explanatory sequential mixed methods research design, where a combination of quantitative and qualitative approaches can provide a deeper understanding and exploration of the research goals (Creswell & Clark, 2017). The study was divided into two phases: in the first phase, a quantitative self-report survey was applied to examine the self-efficacy of Portuguese novice physiotherapists for patient education practice, in the scope of physiotherapy practice. In a second phase, semi-structured interviews were used to explore their perceived preparedness to use patient education practice in their work context and the impact of their pre-professional training.

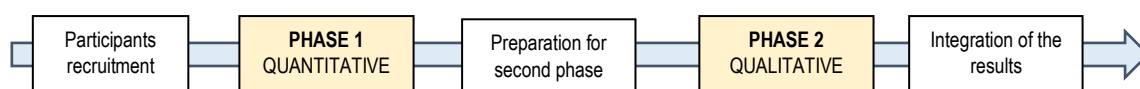


Figure 1. Study Design

This study's protocol was submitted to the Ethics Commission for Research from Health School of Setúbal Polytechnic Institute (CEEI-ESS), which verified all

inherent ethical aspects. The study was approved under code 82/PA/2021 (Appendix A).

2.2.1. Quantitative Phase

The quantitative phase sought to assess the level of self-efficacy of Portuguese novice physiotherapists in relation to a patient education practice, through the completion of an online questionnaire. The self-efficacy construct in the area of patient education was assessed through the Patient Education Self-efficacy Scale (PESES), developed by Forbes et al. (2018). Since this instrument had been available in its original language (English), the translation and cultural validation into Portuguese language was the first step needed for the quantitative phase.

2.2.1.1. Translation and Validation of the Patient Education Self-Efficacy Scale

The PESES was used to measure novice physiotherapists' self-efficacy for patient education practice. The survey was developed specifically for physiotherapy practice use, and consists of a 21-item scale, utilising a five-point Likert scale ranging from "completely disagree" to "completely agree" (Appendix B). These PESES items are derived from a two-round Delphi study, using a panel of 12 specialist physiotherapists, that aimed to generate a set of competencies for patient education in physiotherapy (Forbes et al., 2018a). To minimize the bias of quantitative results, a translation and cultural adaptation to the Portuguese language were performed to implement the survey in Portuguese novice physiotherapists, according to existing guidelines (Gjersing, Caplehorn, & Clausen, 2010). A total of four certified translators and two health professional experts were contacted for the completion of the translation process. Additionally, a convenience sample of 40 final-year physiotherapy students from Setúbal Polytechnic Institute - School of Health Care (ESS-IPS) were invited to participate within the pilot study. The test-retest reliability was also assessed, using a sample of participants who contributed to the pilot study. The participants completed the survey at two different moments, separated by two weeks. All the participants were contacted via e-mail.

2.2.1.2. Patient Education Self-Efficacy Survey

Participants

The participants for this study were Portuguese novice physiotherapists (five years or less of professional practice) (Jensen et al., 1990; Jensen, Gwyer, Shepard, & Hack, 2000), who had completed their four-year physiotherapy program in Portugal and who worked with individuals with musculoskeletal conditions, of at least 80% of their working schedule. Previous research varies widely on the definition of a physiotherapy novice and/or expert, and there appears to be no consensus as to what constitutes a physiotherapy novice or expert in terms of years of experience, recognising that other factors may also be important, including postgraduate training (King & Bithell, 1998) and a multi-dimensional knowledge base (Jensen et al., 2000). Furthermore, in previous studies that have attempted to compare the clinical reasoning of novice and expert physiotherapists, the range of years used to define expert ranges from three to over 10 years of experience (Balluchi et al., 2021; Doody & McAteer, 2002; Jensen et al., 1990; Wainwright, Shepard, Harman, & Stephens, 2011). Considering all these factors, a novice physiotherapist was defined as one who has less than five years of professional experience. Taking into account the particular challenge in the first year of practice (Duchscher, 2009), as mentioned earlier, two subgroups were considered in order to explore the levels of self-efficacy in relation to the years of experience.

The participants represent a non-probabilistic sample by convenience and snowballing (Naderifar, Goli, & Ghaljaie, 2017; Creswell & Clark, 2017). The participants were contacted and invited to participate via e-mail, and the recruitment process was carried out through contact and dissemination from the following entities:

- Health schools from Portuguese polytechnics and universities that offer the physiotherapy degree - among students who have graduated in the last 5 academic years;
- Portuguese Physiotherapists Association (Associação Portuguesa de Fisioterapeutas – APF) and the Portuguese

Musculoskeletal Physiotherapy Group (Grupo de Interesse em Fisioterapia Músculo-Esquelética – GIFME);

- National Association of Youth in Physiotherapy (Associação Nacional de Jovens na Fisioterapia - ANJF).

After completing the questionnaire, participants were asked to identify at least 3 colleagues that had given permission to share their email addresses, in order to reach more participants.

Data Collection

Participants were invited to complete an anonymous online survey. Before starting, the participant information sheet was presented. It included information about: purpose and context of the study, data protection and participants rights, inclusion criteria, instructions to complete the survey, and the e-mail address for possible clarifications. Additionally, consent for participation in the study was obtained through an informed consent statement.

The survey included 10 sociodemographic-related items and 21 PESES-related items. Demographic questions were added to obtain a better overview of the sample characteristics, addressing aspects such as age, gender, years of practice and professional context, health school of physiotherapy study and previous training in patient education, both in terms of basic training (e.g. theoretical classes, case studies discussions) and clinical experience (e.g. curricular internships, observation of other physiotherapists or other health professionals) (Appendix C).

A code was assigned to each participant to guarantee anonymity. To ensure confidentiality data was stored in a personal laptop and the file was protected with a password. The survey was created through the LimeSurvey platform (<https://www.limesurvey.org/pt>).

Data Analysis

Data analysis was performed through Statistical Package for the Social Sciences (SPSS) version 28.0, using descriptive and inferential statistics.

Firstly, descriptive statistics were used to organize the data regarding the sociodemographic characterization of the participants (gender, age, years of experience, graduation school, and work sector), and also the characterization of patient education practice (experiences during bachelor's degree, and frequency of use of educational strategies). The nominal or categorical variables were analysed with absolute and relative frequency measurements, and the scale variables with central tendency and dispersion measurements, i.e., mean, and standard deviation. A Mann-Whitney U test was used to compare self-efficacy survey scores according to gender, years of experience (<1 year; >1 year), and bachelor context (private or public). Significance level for all tests was set at $p < 0.05$.

2.2.2. Qualitative Phase

2.2.2.1. Interviews exploring preparedness for patient education practice

Participants

Individuals considered for participation in this phase were a subset of individuals who participated in the quantitative phase. At the end of the online survey, the respondents were invited to fill a space where a personal e-mail could be inserted to indicate interest. With this completion, they consented to be contacted to participate in the qualitative phase of the study. Following a review of survey responses, the sample was purposefully selected to include participants with different levels of self-efficacy and from different health schools.

The purpose of the PESES was not to provide a final score. Thus, the responses were analysed individually and, arbitrarily, participants were grouped taking into account a range of self-efficacy levels. After the participants were grouped according to their self-efficacy level, they were arranged according to their bachelor's degree school, with the aim to enable contact with participants from all schools, in order to obtain the greatest possible representativeness. In addition, a number has been assigned and randomly generate an order by which they were contacted via email to request participation. In case of no response was received within five days, the random selection continued.

Data Collection

Semi-structured interviews were carried out to explore Portuguese novice physiotherapists' perceptions and experiences about their preparedness to implement patient education. This strategy is useful to expand the knowledge from the quantitative results, providing a rich insight into participants' experiences and beliefs, and allowing a greater understanding of the factors that lead people to adopt certain behaviours (Klem, Bunzli, Smith, & Shields, 2022; Stuckey, 2013). Semi-structured interviews comprehend pre-established questions, normally open-ended questions, with the flexibility to the moment when they are approached. The script for a semi-structured interview developed by Willesmith et al. (2020) was used as a reference to guide the interviews for this study (Appendix D), and it was piloted and adjusted by the research team to ensure that it was appropriate for the particular set of Portuguese musculoskeletal practice. The interview script contains nine core questions and five probing questions. Before introducing the core questions, a brief review about the purpose of the study, the protection rights, the future use of data collected, and a definition of patient education were included to build comfort with the interview.

Interviewing is challenging, as it involves multi-tasking such as: listen the participant, thinking about the questions, and spotting relevant information for example (Clarke & Braun, 2013). For this purpose, a period of skills training was conducted during the month of May 2022. Three interviews were conducted, using Zoom software (San Jose, California, USA), and the script stipulated for the study interviews was used to be pre-tested and checked if any changes were needed. The three interviews were carried out with physiotherapists who practice in the musculoskeletal context. During this training period a reflexive diary was developed. In this diary, each interview was analysed with the support from the supervisory team, who provided feedback that was integrated in the following interview.

Once the skills training was completed, each participant received a list with three options of dates and times for the session, in order to facilitate their scheduling. Each recruited participant was asked about their availability for the proposed dates

and times and subsequently selected the day and time according to their preference (Clarke & Braun, 2013). Three days before each interview, an e-mail was sent to the participant reminding them of the date and time of the interview, the link to the Zoom room and a document with the main questions of the script, to promote a previous reflection on the topic. In this email, the link to fill out the informed consent was also sent, which should be done until the interview start time (Clarke & Braun, 2013).

Eligible participants completed an online, one-to-one semi-structured interview conducted by the lead investigator (DS) using Zoom video. The researcher had the role of clarifying some concepts related to the subject of study, introducing the script questions, and adjusting them according to the participant's discussion, as well as deepening aspects mentioned by the participant.

The sessions were recorded in audio formats for later transcription, as this method facilitates accuracy and transparency during data analysis (Tong, Sainsbury, & Craig, 2007).

Based on previous similar studies (Ferreira, Martins, Pimenta, & Gonçalves, 2022; Forbes & Ingram, 2019; Wilesmith et al., 2020), the researchers expected to require about 10 to 15 interviews. Despite the conflicting evidence about the concept (Braun & Clarke, 2021), data saturation was also considered as a possible criteria to discontinue the interviews (Creswell & Clark, 2017; Dias & Gama, 2019). However, it is important to note that trying to predict the point in the data at which saturation is reached cannot be directly linked to the number of interviews, as the meaning of any theme derives from the data set, and the interpretive process (Braun & Clarke, 2021).

Data Analysis

Qualitative data analysis was carried out through thematic analysis, following a combination of deductive and inductive approaches (Creswell & Clark, 2017; Dias & Gama, 2019). In a deductive approach the researchers sought to use the material collected with a theoretical base structure that determined a priori the main

categories and subcategories of analysis, as well as definitions, examples, and coding rules of deduced categories. With an inductive approach, the researchers began from collected data and formulated the categories of analysis inductively, allowing continuous reflection about collected data (Creswell & Clark, 2017).

The thematic analysis of the interviews content was performed according to the six phases described by Clarke and Braun (2013). In the first stage, each transcript was read, and the initial ideas were noted (1 - familiarization with the data); then, certain characteristics of the data were identified throughout the transcript (2 - coding). After these codes were created, they were combined into potential themes and sub-themes (3 - theme search), which were then refined by reviewing the coherence between illustrative excerpts and themes to build a thematic map and reviewing the validity of themes about the data set (4 - theme review). After this process, the specification and clear definition of each theme and its consequent naming was carried out (5 - theme definition and naming). Finally, the analysis was revised, and related writing were performed (6 - production of the report) (Braun & Clarke, 2006; Clarke & Braun, 2013).

Transcription was performed by the lead researcher and started after the first interview and continued concurrently with subsequent interviews. During the transcription phase, a pseudonym was used to guarantee the participant was non-identified. Microsoft Excel 365 software was used to facilitate the organisation of data and this process of comparing analyses between researchers.

2.3. Ensuring rigour and quality

Considering the quality criteria defined for qualitative studies, some strategies were employed to ensure the rigour of the present study.

In order to enhance the credibility of the study, investigator triangulation was implemented (Korstjens & Moser, 2018). This involved the three members of the research team in the analysis process. The analyses were compared, and in situations where there were divergences, the interpretations were discussed and the one that best represented the meaning of the data was selected. In addition to

contributing to the credibility of the study, investigator triangulation was recommended to ensure a rich and comprehensive analysis that includes the perspectives and interpretations of different researchers.

Additionally, "member checking" was also used as a strategy to promote the credibility. This procedure consisted of asking the participants to provide feedback about the data analysis. This procedure aimed to allow participants to check the data analysis performed by the researchers and express their agreement or disagreement (Korstjens & Moser, 2018). A document was sent to each participant, via email, which included the themes and subthemes that were generated from the analysis, with the respective summary of the interpretation of the data obtained. Despite their previous availability to participate, no feedback was received.

An audit trail was also developed (Appendix E). It included the description of the various stages of data analysis in this study, contributing to the transparency of the research approach (Korstjens & Moser, 2018). The audit trail can be used to establish various quality criteria, such as "dependability", which allows verification that the analysis process is in accordance with the requirements of the study design; and "confirmability", which seeks to guarantee the neutrality of the data interpretation process (Korstjens & Moser, 2018).

In order to assess and minimise the influence of the researchers' assumptions, biases and values on decision-making throughout the study, some reflective notes were taken during each stage of the research process and compiled in a reflexive diary (Appendix F). This strategy comprehend the criterion of reflexivity (Korstjens & Moser, 2018).

3. Results

3.1. Quantitative phase

3.1.1. Translation and validation of the Patient Education Self-Efficacy Scale

The expert panel which assessed the translations and back-translation regarding semantic equivalence was composed of three certified translators, two health professionals/researchers (one physiotherapist who has developed research on patient education and one linguistic specialist) and the three authors of this study. The objectives of this panel were to analyse the quality of the translations and back-translations of the PESES about clarity, language, and literal translation, as well as the equivalence of meaning of the translated items and, finally, to reach a consensus on the translation of this measuring instrument.

From the analysis of the semantic equivalence of the translations and back-translation of the PESES, the expressions with a need for consensus were those described below (Table 1).

Table 1. Semantic equivalences of Patient Education Self-Efficacy Scale

	Original version	Semantic equivalence
Title	Patient education	“Educação ao utente”
Answer option	Undecided	“Sem opinião”
Item 4	“I feel confident to...”	“Sinto-me confiante em...”
Item 7	“... tailored...”	“personalizados”
Item 9	“I feel confident to use shared decision making”	“Sinto-me confiante em tomar decisões de forma partilhada com o utente”
Item 10	“... provide...”	“fornecer”
Item 11	“... (where they are present)”	“(se presentes)”
Item 14	“... in the best interest of the patient”	“... que sejam do melhor interesse do utente”
Item 19	“... review...”	“rever”

Pilot Study

Final year physiotherapy students from ESS-IPS were contacted and invited to fulfil the survey and answer questions about clarity, comprehension, cultural relevance, and adequacy of the words used (Appendix G). A total of 40 respondents were obtained, mostly female (n=22, 55%). The response rate was 40/46, corresponding to 86.96%. The average time to complete the PESES was approximately 8±3 minutes (minimum: 3 minutes, maximum: 15 minutes).

The answer option “*sem opinião*” (“undecided” – original version) raised doubts, with the participants justifying that in some cases it was not a question of not having an opinion, but of not knowing which side they stand on (Appendix H). The expert panel had previously suggested as a translation of the term "undecided" the “Portuguese” expression "neither agree nor disagree", arguing that it is more common in Portuguese questionnaires that use a Likert scale. Thus, the research team decided to consider this feedback, assuming the option "neither agree nor disagree", and the final version of the PESES for the Portuguese language was reached (Appendix I).

Test-retest reliability

To assess test-retest reliability, the internal consistency (Cronbach’s alpha) and temporal stability (Intraclass Correlation Coefficient) were calculated (n=40). The results obtained were similar for both measures, achieving a value of 0.954 (95% CI [0.931–0.972]).

Table 2. Internal Consistency and temporal stability values of Patient Education Self-Efficacy Scale

Patient Education Competency Item	Test-retest reliability	
	Interrater Reliability (ICC)	Cronbach’s Alpha (α)
I understand the role of patient education	0.799	0.801
I understand the impact of social, cultural, and behavioral variables on patient learning	0.799	0.801
I understand the principles of adult learning	0.891	0.890
I feel confident to use questioning to seek the patient’s perceptions and concerns about their condition	0.703	0.699

I feel confident to obtain information from the patient assessment to understand their learning needs	0.669	0.665
I feel confident to use reflective questioning (questions that allow the patient to reflect out loud)	0.839	0.836
I feel confident to select and use a range of appropriate learning content tailored to the patient	0.697	0.694
I feel confident to explain the patient's condition to them	0.850	0.857
I feel confident to use shared decision-making	0.769	0.772
I feel confident to provide self-management strategies to the patient and reinforce their ability to manage	0.814	0.810
I feel confident to provide family or caregivers with information (where they are present)	0.934	0.933
I feel confident to tailor communication styles, language, and materials to the patient	0.563	0.563
I feel confident to control attention and engagement when educating the patient	0.755	0.772
I feel confident to provide education content that is in the best interests of the patient	0.595	0.592
I feel confident to recognise and effectively manage barriers to effective education	0.801	0.808
I feel confident to summarise information for the patient	0.831	0.837
I feel confident to integrate evidence-based practice into patient education	0.803	0.799
I feel confident to identify when patient learning has been achieved through evaluation	0.836	0.850
I feel confident to review progress of the patient's learning	0.893	0.894
I feel confident to provide patient education within the limits of my practice and refer on to another professional where appropriate	0.894	0.893
I feel confident to take action to continue to develop my patient education skills (professional development)	0.705	0.707

3.1.2. Patient education self-efficacy survey

Participants characterization

A total of 228 survey responses were received between the 3rd of April and the 31st of July 2022. Of these 228, a total of 151 were complete, and thus included in the analyses. The sociodemographic characteristics of the participants are presented in Table 3. The mean age of participants was 25 years (\pm 2.79). The majority were female (n=91, 60.3%), more than one quarter had less than one year of practice (n=43, 28.5%), and the majority worked in the private sector (n=123, 81.5%). All physiotherapy schools in Portugal that were contacted for recruitment for the study

are represented in the sample, with at least one participant. The three schools with the highest representation were: Escola Superior de Saúde – Instituto Politécnico de Setúbal (n=39, 25.8%), Escola Superior de Saúde – Instituto Politécnico do Porto (n=21, 13.9%) and Escola Superior de Saúde Dr. Lopes Dias – Instituto Politécnico de Castelo Branco (n=19, 12.6%). The schools with the lowest representation, with only one participant (0.7%) were Escola Superior de Saúde Atlântica, Escola Superior de Saúde de Santa Maria, Escola Superior de Saúde Jean Piaget – Vila Nova de Gaia and Viseu, and Instituto Superior de Saúde do Alto Ave. Nearly all (92.1%) participants reported that they received some training in the use of patient education as an intervention during their physiotherapy degree. Most participants reported that the follow-up of patients during a curricular internship (n=129, 85.4%) was the strategy that most contributed to the development of competencies related to patient education, followed by the observation of other physiotherapists (n=115, 76.4%). Most participants reported using education strategies during their clinical practice “often” or “always” (n=132, 87.4%).

Table 3. Sociodemographic characteristics of the participants

	Survey respondents (n = 151)
Age, years	
Mean and Standard Deviation	25.07 ± 2.79
Minimum	21
Maximum	43
Gender, n (%)	
Female	91 (60.3)
Male	60 (39.7)
Years of practice, n (%)	
< 1 year	43 (28.5)
1 – 2 years	30 (19.9)
2 – 3 years	33 (21.9)
3 – 4 years	22 (14.6)
4 – 5 years	23 (15.2)
Work sector, n (%)	
Public	11 (7.3)
Private	123 (81.5)
Convention	33 (21.9)
Mixed (public-private)	15 (9.9)

School of the bachelor's degree, n (%)	
CESPU – Instituto Politécnico de Saúde do Norte - Escola Superior de Saúde do Vale do Ave	3 (2.0)
CESPU – Instituto Politécnico de Saúde do Norte - Escola Superior de Saúde do Vale do Sousa	4 (2.6)
Escola Superior de Saúde Atlântica	1 (0.7)
Escola Superior de Saúde da Cruz Vermelha Portuguesa	9 (6.0)
Escola Superior de Saúde de Santa Maria	1 (0.7)
Escola Superior de Saúde de Alcoitão	9 (6.0)
Escola Superior de Saúde Egas Moniz	5 (3.3)
Escola Superior de Saúde Jean Piaget – Silves	2 (1.3)
Escola Superior de Saúde Jean Piaget – Vila Nova de Gaia	1 (0.7)
Escola Superior de Saúde Jean Piaget – Viseu	1 (0.7)
Escola Superior de Tecnologia da Saúde de Coimbra	6 (4.0)
Escola Superior de Tecnologia da Saúde de Lisboa	4 (2.6)
Instituto Politécnico de Castelo Branco – Escola Superior de Saúde Dr. Lopes Dias	19 (12.6)
Instituto Politécnico de Leiria - Escola Superior de Saúde	11 (7.3)
Instituto Politécnico de Setúbal - Escola Superior de Saúde	39 (25.8)
Instituto Politécnico do Porto - Escola Superior de Saúde	21 (13.9)
Instituto Superior de Saúde do Alto Ave	1 (0.7)
Universidade de Aveiro - Escola Superior de Saúde de Aveiro	10 (6.6)
Universidade Fernando Pessoa - Escola Superior de Saúde	4 (2.6)
Approach to patient education at the bachelor's degree, n (%)	
Yes	139 (92.1)
No	12 (7.9)
Strategies to develop patient education competencies, n (%)	
Follow-up of patients in curricular internships	129 (85.4)
Observation of other physiotherapists	115 (76.2)
Observation of other health professionals	43 (28.5)
Other	4 (2.6)
Frequency of use of educational strategies, n (%)	
Never	0 (0.0)
Rarely	5 (3.3)
Occasionally	14 (9.3)
Often	74 (49.0)
Always	58 (38.4)

Patient education self-efficacy scale

The two items with the highest self-efficacy scores, of which 100% (n=151) of respondents selected “agree” or “strongly agree” were “I understand the role of patient education” and “I understand the impact of social, cultural, and behavioral variables on patient learning”. Item 4 (“I feel confident to use questioning to seek the patient’s perceptions and concerns about their condition”), item 9 (“I feel confident to use shared decision-making”), and item 10 (“I feel confident to provide self-management strategies to the patient and reinforce their ability to manage”) featured response rates over 90% for “agree” or “strongly agree”, respectively, 92% (n=139),

93.4% (n=141), and 92.1% (n=139). The item with the lowest self-efficacy score, indicated by the greatest proportion of respondents selecting “strongly disagree”, “disagree” or “undecided” was “I feel confident to recognise and effectively manage barriers to effective education” (n=61 40,4%).

No statistically significant differences were found between individual survey items scores and gender (p = 0.08-0.94), years of experience (<1 year - >1 year) (p = 0.05–0.99), and bachelor context (public - private) (p = 0.11–0.95) (Appendix J).

Table 4. Frequencies of Patient Education Self-Efficacy survey responses

Patient Education Competency Item	Strongly Disagree n (%)	Disagree n (%)	Undecided n (%)	Agree n (%)	Strongly Agree n (%)
I understand the role of patient education	0 (0.0)	0 (0.0)	0 (0.0)	36 (23.8)	115 (76.2)
I understand the impact of social, cultural, and behavioral variables on patient learning	0 (0.0)	0 (0.0)	0 (0.0)	41 (27.2)	110 (72.8)
I understand the principles of adult learning	0 (0.0)	5 (3.3)	26 (17.2)	77 (51.0)	43 (28.5)
I feel confident to use questioning to seek the patient's perceptions and concerns about their condition	0 (0.0)	4 (2.6)	8 (5.3)	84 (55.6)	55 (36.4)
I feel confident to obtain information from the patient assessment to understand their learning needs	0 (0.0)	5 (3.3)	16 (10.6)	82 (54.3)	48 (31.8)
I feel confident to use reflective questioning (questions that allow the patient to reflect out loud)	3 (2.0)	10 (6.6)	37 (24.5)	68 (45.0)	33 (21.9)
I feel confident to select and use a range of appropriate learning content tailored to the patient	2 (1.3)	15 (9.9)	24 (15.9)	71 (47.0)	39 (25.8)
I feel confident to explain the patient's condition to them	0 (0.0)	4 (2.6)	18 (11.9)	82 (54.3)	47 (31.1)
I feel confident to use shared decision-making	1 (0.7)	2 (1.3)	7 (4.6)	91 (60.3)	50 (33.1)
I feel confident to provide self-management strategies to the patient and reinforce their ability to manage	0 (0.0)	1 (0.7)	11 (7.3)	83 (55.0)	56 (37.1)
I feel confident to provide family or caregivers with information (where they are present)	0 (0.0)	6 (4.0)	14 (9.3)	77 (51.0)	54 (35.8)
I feel confident to tailor communication styles,	0 (0.0)	5 (3.3)	16 (10.6)	77 (51.0)	53 (35.1)

language, and materials to the patient					
I feel confident to control attention and engagement when educating the patient	1 (0.7)	12 (7.9)	28 (18.5)	72 (47.7)	38 (25.2)
I feel confident to provide education content that is in the best interests of the patient	0 (0.0)	9 (6.0)	33 (21.9)	70 (46.4)	39 (25.8)
I feel confident to recognise and effectively manage barriers to effective education	2 (1.3)	13 (8.6)	46 (30.5)	70 (46.4)	20 (13.2)
I feel confident to summarise information for the patient	0 (0.0)	4 (2.6)	13 (8.6)	88 (58.3)	46 (30.5)
I feel confident to integrate evidence-based practice into patient education	1 (0.7)	6 (4.0)	23 (15.2)	71 (47.7)	49 (32.5)
I feel confident to identify when patient learning has been achieved through evaluation	4 (2.6)	11 (7.3)	26 (17.2)	80 (53.0)	30 (19.9)
I feel confident to review progress of the patient's learning	2 (1.3)	8 (5.3)	32 (21.2)	80 (53.0)	29 (19.2)
I feel confident to provide patient education within the limits of my practice and refer on to another professional where appropriate	0 (0.0)	5 (3.3)	13 (8.6)	76 (50.3)	57 (37.7)
I feel confident to take action to continue to develop my patient education skills (professional development)	0 (0.0)	1 (0.7)	21 (13.9)	65 (43.0)	64 (42.4)

3.2. Qualitative phase

3.2.1. Interviews exploring preparedness for patient education practice

Of the 151 participants who completed the survey, 77 (51.0%) indicated interest for interviewing by responding that they would agree to be contacted for the qualitative phase. From those, 23 physiotherapists were contacted, with 12 subsequently responding to email contact. The interviews were conducted in June and July 2022, and the perception of data saturation was reached after the 10th interview; however, the research team decided to conduct two more interviews as they were previously scheduled, and the participants were from physiotherapy schools which were not represented within previous interviews. Participants had a mean age of 25 years (minimum – 23; maximum – 28), both genders are equally represented (50% each), and 10 different health schools in Portugal are represented (10/19, 52.6%). Most participants attended their undergraduate degree in public health schools (n=8,

66.7%). Five participants enrolled in a master's programme (n=5, 41.2%). Further demographic information is outlined in Table 4.

Table 5. Participants' characterization in the qualitative study

Name (fictitious)	Age (years)	School	Years of Experience	Sector of practice	Master's Entry
Diana	26	Instituto Politécnico de Lisboa - Escola Superior de Tecnologia da Saúde de Lisboa	3 - 4	Private	Yes
Philip	24	Universidade de Aveiro - Escola Superior de Saúde de Aveiro	1 - 2	Private	No
Nadia	24	Escola Superior de Saúde de Alcoitão	1 - 2	Private	Yes
Daniela	24	Instituto Politécnico de Leiria - Escola Superior de Saúde	1 - 2	Agreed	No
Richard	23	Instituto Politécnico de Setúbal - Escola Superior de Saúde	< 1	Private	No
Henry	28	Escola Superior de Saúde Egas Moniz	4 - 5	Private	No
Laura	26	Escola Superior de Saúde da Cruz Vermelha Portuguesa	3 - 4	Private + Conventioned	Yes
Sophie	24	Instituto Politécnico de Castelo Branco - Escola Superior de Saúde Dr. Lopes Dias	2 - 3	Public	Yes
Rachel	27	Universidade de Aveiro - Escola Superior de Saúde de Aveiro	3 - 4	Private	Yes
Nicholas	23	Instituto Politécnico do Porto - Escola Superior de Saúde	< 1	Private	No
Louis	23	Instituto Politécnico de Setúbal - Escola Superior de Saúde	< 1	Private	No
Frederick	26	Escola Superior de Saúde Jean Piaget de Viseu	4 - 5	Private	No

At completion of interviewing, 766 minutes of recordings were obtained (64 minutes on average – 40 minimum [Diana]; 81 maximum [Sophie]), which generated 159 transcript pages (13 average – 7 minimum; 17 maximum).

Following analysis of the interviews, four main themes were generated: (1) perspectives of patient education practice; (2) challenges around patient education practice; (3) preparedness for patient education practice; and (4) reflections about pre-professional training. These themes explore the aspects that the study participants considered most relevant concerning their perceived preparation for

patient education practice and how it was influenced by their pre-professional training. Each theme was divided into subthemes (Table 1). To support the analysis, some extracts were selected from the interviews. Each extract is coded to allow the association of a specific participant (fictitious name) and an interview. The coding also includes the page and line numbers of the respective transcript, allowing the extract to be quickly located. For example, in the code “Philip, I2, 6-9, 10-12”: “Philip” refers to the fictitious name assigned to the participant; “I2” indicates the number of the interview; “6-9, 10-12” refers to the corresponding lines of the presented extract. Regarding the meaning of the symbology used in the transcription of the excerpts:

(...) - means that part of the excerpt was omitted, for not contributing to the understanding of the content presented;

... - means the existence of a moment of silence;

Table 6. Themes and sub-themes

Themes	Sub-themes
1. Perspectives of patient education practice	1.1. Role of patient education
	1.2. Facilitators for patient education practice
2. Challenges around patient education practice	2.1. Barriers to patient education practice
	2.2. Challenges to assess the effectiveness of patient education
	2.3. Strategies to overcome barriers
3. Preparedness for patient education practice	3.1. Factors that negatively influence the level of preparedness
	3.2. Factors that positively influence the level of preparedness
4. Reflections on pre-professional training	4.1. The role of the entry level program in the development of competencies for patient education practice
	4.2. Strategies that may improve entry level preparedness for patient education

Theme 1: Perspectives of patient education practice

This theme explores novice physiotherapists' perceptions about patient education and the factors that facilitate their practice. Thus, this theme comprises two sub-themes: the role of patient education; and facilitators for patient education.

Sub-theme 1.1. Role of patient education

Participants perceived that educating patients is an integral and extensive part of being a physiotherapist.

"It has a very important role and is undoubtedly one of the interventions that I... that I think is more relevant, because I think it is our role as physiotherapists to educate the patient and inform the patient about their clinical condition, contributing factors... (...) is one of the reasons why patients seek us, but also because I think one of our roles as physiotherapists is to clarify and educate the patient." (Philip, I2, 6-9, 10-12)

"(...) important and crucial role... It's a method that I at least try to use in all my patients because at least in the majority of the conditions that I, that I have in the clinic... education is indeed recommended as being part of the treatment." (Nadia, I3, 9-11)

Participants expressed that providing information to the patient regarding their condition and the role of the patient in managing their condition is important especially for the patient to be positioned to self-manage their condition and associated symptoms.

"(...) in my clinical practice it also plays a very important role in health prevention. Therefore, for example, a low back pain pathology... if I receive the patient and if I can educate the patient properly, I can prevent the patient from coming back... perhaps a flare-up can occur or there could be a new, more acute situation and then the patient can manage it on her own, right?... (silence) and doesn't need to come to me again to get better..." (Diana, I1, 214-220)

Participants considered that their first consultation with the patient is a valuable opportunity to assess the patient's beliefs and knowledge, which allows patient education to be tailored. However, participants emphasized that patient education is a priority not only initially, but throughout the entire rehabilitation process.

"(...) the first time I see a patient, the first thing I do is listen carefully to what he has to say, what makes him seek physiotherapy and from that interview model, I will begin to understand what beliefs the patient has, how he deals with his condition, what he does, what he doesn't do, what improves and what does not improve his condition." (Laura, I7, 20-24)

Some participants reflected about how patient education changes over the course of the patient's care, moving through stages of education as their physiotherapy care progresses.

"I think this should be applied at all stages (...) The simple fact of just having a bath or to have exercises to do at home, or having to put ice, for example... or other types of things, all this is part of the education we provide. And then, in a more advanced stage, just explaining that they have to rest, that they can't go out... and they already feel good after 2, 3 months and "yeah, now I want to run by myself. I'm going to run". No, we have to explain... I think this explanation is also part of the education. That is, explaining the whole process throughout its different phases." (Henry, I6, 60, 62-68)

Participants explained that while they recognised the role of patient education in enhancing patients' knowledge and comprehension about their condition and rehabilitation process, this knowledge should result in changes in behaviour to be ultimately effective.

"An effective education is mainly an education in which the patient understands the condition he has, how it impacts his life and in which way the therapeutic treatment can improve his condition and his quality of life." (Daniela, I4, 182-184)

"If I know something, but then I don't put it into practice, it's useless... What I do is... I assure that this education is conveyed, that this knowledge is conveyed and that later it will be expressed in given moments, translated into given behaviours, so that it becomes... because from the start it is always a positive aspect... so that it really becomes a behaviour or a habit." (Frederick, I12, 465-468)

Sub-theme 1.2. Facilitators for patient education practice

From the perspective of most participants, the aspects that facilitate effective patient education practice were mainly related to patient characteristics, depending mostly on their motivation and level of literacy.

"The will of the patient to learn. I think that's the main aspect. If the patient has the will to understand, it helps a lot." (Henry, I6, 273-274)

“(...) I would be lying if I did not say that there are patients with certain traits that make this dialogue and discussion a little easier... to be a bit more precise, I would say that there are factors that influence, for example... the level of education, the level of literacy... (...) people with a higher level of literacy find it easier to engage in this discussion in a more active way, instead of just taking a more a passive stand by just listening to the information that the healthcare professional is providing.” (Louis, I11, 157-160, 163-166)

Several aspects relating to the physiotherapist were also mentioned. Participants perceived that for patient education to be effective, it must be underpinned by current evidence.

“Look, if we assume that we want and conduct an evidence-informed practice, I think this aspect is already a facilitator because we know that education is there and, therefore, we will want to implement it.” (Sophie, I8, 556-558)

Alongside this aspect, good communication skills that promote empathy and a strong therapeutic relationship were also recognised as facilitators in the transmission and reception of information.

“But I think one of the biggest facilitators is that, is... I think it's the empathetic relationship that we are able to create instantly, and I think that if we captivate the patient, they will accept well what we tell them.” (Nicholas, I10, 608-610)

Some aspects related to context were also perceived to facilitate education, where work colleagues were considered an important source of support and encouragement in the practice of patient education.

“I think that the environment in which I work is also very favourable because I have work colleagues who are also relatively... I won't say young, but that also have some work experience and who are very collaborative and always willing to help, which is great for me.” (Richard, I5, 338-341)

Additionally, participants expressed the value in having time and a space for patient education to be practiced effectively.

“Well, in terms of the work context, what would be easier in the sense of me feeling more confident giving was, really, if I had more time with the patient to explain.” (Laura, I7, 214-215)

"It's not even my case, but if we already have a desk, some chairs to sit on, that alone... the patient sees the chairs, it already creates a greater openness." (Philip, I2, 628-629)

Theme 2: Challenges around patient education practice

In this theme, participants reflected on the challenges regarding patient education especially concerning its implementation and effectiveness, and also how they sought to overcome them. Thus, this theme comprises three sub-themes: barriers to patient education practice; difficulties to assess the effectiveness of patient education; and strategies to overcome barriers.

Sub-theme 2.1. Barriers to patient education practice

All participants identified at least one patient-related barrier that influenced their practice. Patients' lack of openness to receive education, poor attitudes towards physiotherapy, previous experiences and personal characteristics represented the most commonly mentioned barriers.

"For me, perhaps the biggest barrier is this lack of openness of the patient. If the patient doesn't come in seeking for answers, doesn't want to know our opinion, doesn't want advice... sometimes it becomes very difficult, although I think it's relevant, because they have some ideas that in my opinion... according to the most up-to-date evidence, are not the most correct..." (Philip, I2, 58-61)

"(...) on the other hand, the patients are also not... not predisposed, I'm not saying they're predisposed... they're just not used to this type of intervention in which they just come in and listen or talk to us and then they leave." (Sophie, I8, 368-371)

Furthermore, participants outlined that sometimes they are confronted with patients who present firmly established thoughts and show resistance for changing them.

"What I think is that sometimes what is more difficult and what poses the biggest barrier is people not wanting to change their thinking. Some people, I'm not saying it's all people. It's people who already have beliefs that are too deeply rooted and who don't have the openness to change or to think differently." (Daniela, I4, 250-253)

Physiotherapist-related barriers were also widely identified by participants, particularly associated with their knowledge and communication skills.

“(...) for example, there are situations that I find difficult to explain to the patient... I can't use... I can't explain in a simple or understandable way what is going on or clarify their doubts (...) sometimes I simply do not have the knowledge to give them certain answers (...)” (Philip, I2, 82-85)

Some participants also identified context-related barriers, where it became evident that the negative effects of a noisy environment and no privacy, can compromise a patient's focus and willingness to talk.

“I think one barrier might be that we are surrounded by a very busy, fast-paced environment where patients may not feel comfortable having a more in-depth discussion about their perceptions (...)” (Louis, I11, 483-485)

Considering the context of physiotherapy practice in Portugal, organisational barriers were also identified, which included a perceived lack of recognition of education as an intervention strategy.

“One of the barriers I just remembered is the fact that, in our practice, educating is not valued as an intervention strategy, i.e., the SNS does not pay physiotherapists for an educating session. You're paid for massage, you're paid for mobilization, you're paid for strengthening and nobody pays you, the SNS does not pay you to educate patients.” (Sophie, I8, 577-581)

This organisational challenge was felt to result in a lack of time to promote and prepare educational content, which were seen, for example, to compromise patients' self-management skills.

“Many times, I would say that it can also be the time available. In other words, for example, this question of sending the homework, I often think it's a good idea, but I often have an hour with the patient, then my schedule is already full, I don't want to take too much work home, because I already have a busy schedule, so I end up not suggesting it, because I know I won't have the time available to make a commitment...” (Nicholas, I10, 510-515)

Sub-theme 2.2. Challenges to assess the effectiveness of patient education

One of the biggest challenges identified regarding patient education corresponds to the difficulty in evaluating its effectiveness. Participants perceived that their difficulties derive mainly from the lack of objective measures to assess the effectiveness of education.

"I mean, sometimes I perceive it implicitly, but I don't do it in a judicious way, like, "Look, in this session it is important to understand if he has understood what I have conveyed." I mean, sometimes I realise that he has understood, but often in an implicit and unconscious way, which means that I don't feel I'm methodical to the point of wanting to assess whether the educating knowledge was properly conveyed." (Richard, I10, 177-181)

"(...) for example, trying to demystify the more structural questions and trying not to... overvalue the imaging findings, I explain them, but then I find it very difficult to grasp if in fact the patient agrees, understands and accepts them or if, ok, that makes sense, but then continues to believe that seeing that hernia there is what is important and that it is what is causing the pain (...)" (Nadia, I3, 87-91)

Participants expressed that despite the inherent subjectivity, trusting the patient's word is crucial to bridge the lack of objective measures.

"I think through individual interaction with patients we can get an idea, but again, having an idea is different from having an objective perception and an objective marker of change of behaviour." (Louis, I11, 114-116)

Sub-theme 2.3. Strategies to overcome barriers

When asked about the strategies they use to overcome barriers, most participants expressed that a large part of this goal involves the adoption of strategies that are within their locus of control, such as self-directed study and discussion with peers. Participants widely reported that enhancing the therapeutic alliance, creating empathy with the patient, is important for building and maintaining trust in the professional.

"I try to start by gaining the trust of the patient... show empathy, try to listen to the patient, ask some questions in order to understand if, for example, in the case of disbelief in physiotherapy, what situations occurred to contribute to this or... if the patient takes no responsibility, what is the reason that leads him/her to take no responsibility... and then, through these more key aspects, try to really demonstrate to the patient... and deconstruct some issues to then try to start the process of educating the patient and... well, try to reach the patient in that way." (Diana, I1, 136-42)

"We can't change the previous experience that patient have had, it's not... the way I would say that I have to overcome this would be... well, this, to try to create, to develop a therapeutic partnership and gain the trust of the patients so that they understand that, ok, I am a trustworthy professional, whom

they can trust, who will pass on information or who is willing to make an exchange of information that is correct and appropriate for their clinical condition.” (Louis, I11, 554-559)

However, when seeking to manage and overcome patient-related barriers, participants were faced with more challenges. These situations seem to be related to barriers that were out of their control, where they did not perceive to be prepared to overcome deeply held beliefs or a passive attitude towards treatment.

“(…) there will always be cases that no matter how much I want and how good my communication is and how good my knowledge is, the patient just doesn't come looking for it” (Philip, I2, 177-179)

“Now, changing these myths or beliefs, if you're someone aged 75 or 80, it's very difficult. Only if you can really get a lot of results, then the patient starts to associate that they used to do one thing, but now they do it differently and they can even feel better... But if there isn't this noticeable result, I can't create much of a change.” (Frederick, I12, 160-164)

Theme 3: Preparedness for patient education practice

In this theme, participants explored ideas about the factors that impact on their preparedness for education practice and how they seek to enhance it. Thus, this theme comprises two sub-themes: factors that negatively influence the level of preparedness, and factors that positively influence the level of preparedness.

Sub-theme 3.1. Factors that negatively influence the level of preparedness

Perceived complexity was a key source of challenge for participants when delivering patient education, especially within chronic pain conditions.

“I think that everything that is chronic becomes much more difficult to explain and educate the patient because it is much more complex... Then the patient don't understand that chronic pain doesn't mean that something is wrong and when I say this, the patient... sometimes I get the feeling that the patient think I'm not valuing their pain.” (Rachel, I9, 250-254)

Participants described a lack of preparedness and confidence when faced with complex clinical presentations. The source of decreased preparedness was often attributed to feelings related to their entry-level training and communication skills.

“And when there are other more complex conditions, because of the lack of an in-depth explanation of the complexity of the clinical condition, let's say, during the classes given in the degree course, I think that now I also do not feel so confident to speak (...)” (Daniela, I4, 508-510)

“(...) in most conditions I feel that I still don't have enough knowledge and up-to-date knowledge to be able to actually explain and educate the patient using the right words.” (Nadia, I3, 111-113)

In addition to communication skills, participants described lacking a sense of preparedness to tailor communication to the patient.

“And sometimes I feel that it is a little difficult to use the terminology... the terminology that people understand; that we are sometimes a little stuck in our nomenclature and we need to find strategies for people to understand without getting the wrong idea, because we already know that each patient interprets things according to their context (...)” (Daniela, I4, 64-68)

Sub-theme 3.2. Factors that positively influence the level of preparedness

Participants perceived to be prepared to provide patient education when patients' motivations favour this practice, especially when they show interest for an educational intervention.

“And when the patient shows interest and seeks... when they seek us, so, when they are available to ... to listen to us, to cooperate, to... recover as well.” (Diana, I1, 76-78)

Furthermore, several participants expressed the idea that the absence of inadequate beliefs simplifies the practice of education, enhancing the feeling of preparedness.

“(...) when the patient does not come with some ideas and beliefs that, in my opinion, are completely inadequate, everything is much simpler, and I feel that everything is much more effective in these cases.” (Philip, I2, 358-360)

Participants expressed that professional experience is fundamental to positively influence the perception of preparedness, further explaining that frequent experience with certain pathologies facilitates the preparation and delivery of educational content.

“A pathology that I already have a lot of experience in, I have treated several identical cases, past experiences... with different symptoms where the results were also very positive. In these situations where I have knowledge about the pathology, about what to do, how to prevent it, and also another more practical aspect in which I have treated that pathology a few times.” (Richard, 15, 292-297)

One participant also emphasised that the existence of clinical guidelines, associated with a less complex condition, promotes a greater sense of confidence and perceived preparedness to promote education.

“(...) for me it was very simple, just because of the condition itself which was a mild sprain and to explain the whole process, which is a more easily defined process than for example a chronic pain that is always much more unknown, it is an acute condition, much simpler, with a more or less established rehabilitation process (...)” (Philip, 12, 378-382)

Observation and discussion with work colleagues were also crucial to enhance preparedness for education practice in participants.

“I mean, accompanying someone who does that, systematically, in their practice, I think for me it worked well to then be able to have confidence and adopt some strategies.” (Sophie, 18, 426-427)

“(...) normally when I am confronted with a clinical condition that I am not comfortable with, I try to really research the existing literature to acquire some knowledge, discuss cases with colleagues... well, the work context really allows me to at least discuss the case with colleagues.” (Laura, 17, 224-227)”

Theme 4: Reflections on pre-professional training

Finally, in this theme the participants reflected on their experiences during the pre-professional training period, taking into account how they were able to develop their competencies for patient education. Thus, this theme comprises two sub-themes: the role of a bachelor's degree in the development of competencies for patient education practice; and strategies that may improve entry level preparedness for patient education.

Sub-theme 4.1. The role of entry level program in the development of competencies for patient education practice

Concerning the role that the undergraduate degree had in developing skills for this type of practice, there was consensus from participants that their undergraduate training did not prepare them to educate patients. Participants recognised that education was addressed but its strategies for implementation as well as the development of communication skills were not explored.

“In what concerns the undergraduate degree, the fact that more emphasis has been placed on this issue because people discuss and say “OK, we have to educate our patients”, but then this concept is not developed. It’s about “we have to educate” and then this approach is not explored. They don’t explain how, they don’t help us to find the information...” (Nadia, I3, 128-131)

“Look, as I said, the undergraduate degree - and I’ve never done any other training focused solely on this part of educating the patient - didn’t prepare us at all. In other words, we read articles saying that the guidelines are exercise and education, exercise and education, but in fact we were far from acquiring the skills we should have to educate the patient. Nobody teaches us how to talk with the patients!” (Sophie, I8, 213-217)

In addition, several participants strongly emphasised that patient education was often seen as not as important or valued during their training, mainly due to the little time spent on studying this concept when compared to other intervention modalities.

“A bad experience in fact. In my undergraduate degree, patient education was not valued or fully addressed. The issue of manual therapy, of exercise therapy, was highly valued, which, of course, are great tools and should be used if it makes sense in the given setting. But, the process of educating the patient ended up being a tool that was not even talked about, I would even say that it was undervalued, which currently I support as being the best tool.” (Laura, I7, 334-337)

One of the main learning gaps perceived by the participants concerns the structuring and planning of educational content, reflecting that they realised how much it was needed after entering into clinical practice.

“(…) It’s always very much based on what is the technical part of the intervention. The manual part, the manual skills, and the reasoning. Now, the way to interact with the patient, the way to speak, how to approach the issues, I don’t remember that being covered.” (Frederick, I12, 313-316)

One participant emphasised that it was in the master's degree that became aware that an educational practice must consider several dimensions, beyond communication.

"For example, only when I started to attend my master's degree, did I realize that education had to be conveyed in doses, with a given frequency... (laughs) I had no idea. For me it was just about discussing and teaching... not educating really, but putting some topics on the table, but that's it, I had no idea that it had a duration, a frequency, an intensity, so to speak... in small doses... For me education was not that." (Rachel, I9, 370-374)

In addition, several participants reported that during their degree the development of clinical reasoning was focused on structure and diagnosis, making it difficult to manage the uncertainty and complexity present in clinical practice.

"(...) I think it was very much focused on manual intervention... so it was not focused on patient-centred practice. The more subjective issues regarding the patient, issues of a more psychological nature, i.e., beliefs, emotional states, were not explored as much as they should have been... we were not directed nor oriented to this part of patient education." (Diana, I1, 177-178, 180-183)

"Ok, we learn the theoretical part, we learn the anatomy, the physiology, we learn some mechanisms of injury, but for example, in conditions like low back pain, which is multifactorial, I think many factors are missing." (Daniela, I4, 112-115)

Sub-theme 4.2. Strategies that may improve entry level preparedness for patient education

Based on their experiences, some participants identified learning experiences that could potentially improve their entry-level preparedness for patient education. They recognized that training patient education with real patients may enhance preparedness of future physiotherapists for this practice.

"(...) trying to do it with people from outside the work setting, who are not our colleagues, because I think it is important to do it with people who are not really from the physiotherapy area to understand... with parents, relatives, colleagues from other courses to "and now I'm going to do it, I'm going to discuss it with this patient, I'm going to pretend that he/she is my patient, I'm going to explain everything I would explain if he/she was my patient and then at the end to get a feedback from that patient"." (Daniela, I4, 157-161)

Alongside this strategy, participants recognised the need to go deeper into aspects related to education, such as its conceptual foundations and planning principles, as well exploring the different educational strategies and resources, in order to implement them according to the patient's needs.

“And then it is really what components does the process of patient education need to have systematically? Do I have to do an individualised session? Do I have to do this transversally? What type of patients can I do this or that with? It's not about having a formula, but rather of having a more specific notion about it.” (Sophie, I8, 272-276)

“I think it would be important in this curricular unit to have a definition of what education means. I think it's a basic concept that has to be provided... To provide it, and I think it is very important, the various educational strategies, from the question of us educating the patient and the patient responding back, providing feedback concerning leaflets... therefore, various strategies suitable for the various types of patients.” (Laura, I7, 356-360)

Participants mentioned that clinical internships can play an important role in developing this competence, emphasising the idea that educational competencies should be explored and assessed during those experiences.

“(...) in the internships, it would perhaps make sense for the internship supervisors to expose us a little to this process of educating the patient and for us to try to understand the barriers, the importance of it, how to do it (...)” (Philip, I2, 454-456)

Finally, one participant emphasised the importance of learning to deal with uncertainty, understanding that the multifactorial nature of conditions does not allow for linear relationships or clear answers.

“Confront students with their doubts, or something like that... show that it's not all that mathematic, because real life is not a mathematic formula.” (Richard, I10, 364-366)

4. Discussion

4.1. Overall discussion

This study is the first to explore Portuguese novice musculoskeletal physiotherapists' self-efficacy and perceived preparedness for patient education practice. The findings indicate that while new graduates possess high self-efficacy and perceived preparedness for most aspects of patient education, they perceived barriers to patient education practice and experience challenges when delivering education in complex situations, which is consistent with previous research (Wilesmith et al., 2020). These challenges and difficulties are perceived to be associated with a lack of training in the complex aspects of patient education use, which may indicate areas for further training and support.

The results of this study indicate that for patient education practice, Portuguese novice physiotherapists seek to individualize the content and educational strategies, according to the patient's knowledge, needs and expectations. Valuing the person's perspective and experience is a fundamental pillar of patient-centred care (Lin et al., 2020; Wijma et al., 2017). In addition, the results also demonstrate the role of patient education in promoting self-management, which is also an attribute consistent with a patient-centred approach, since the physiotherapist emphasizes the active role of the patient in the management of their condition (Leake et al., 2021; Lin et al., 2020). Although the results support the idea that novice physiotherapists have high levels of self-efficacy to adopt an education practice based on a patient-centred approach and consider it important, previous studies show that, there are differences regarding the implementation of these strategies when compared to more experienced physiotherapists (Balluchi et al., 2021; Forbes et al., 2017). One hypothesis that may help to explain these results is the "intention-behavior gap", which represents the difference between one's intention and the outcome (Ajzen, 1991). Furthermore, when compared to experienced physiotherapists, novice physiotherapists tend to reflect less frequently on their interactions with patients, thoughts and actions (Wainwright, Shepard, Harman, & Stephens, 2010). Thus, although the importance of confidence for patient-centred practice is recognized, it may not be reflected in the practice of novice physiotherapists.

Despite most novice physiotherapists demonstrating high levels of self-efficacy in most of the dimensions inherent to patient education practice, the patient education activities with lower levels of self-efficacy are related to the ability to control attention and engagement of the patient during education and recognizing or managing barriers to the effective use of patient education. The qualitative findings consistently corroborated this, with a variety of barriers being identified and described. Understanding the barriers to effective education is essential to build a more complete picture of the physiotherapists' perspective, as well as understanding their motivations for practice (Forbes et al., 2017; Forbes et al., 2017). In the present study, different dimensions of barriers related to patient education practice were identified, and participants consistently identified greater challenges in overcoming patient-related barriers, including perceived patients' passive or negative attitudes towards physiotherapy, as well as inflexible beliefs and thoughts about health. These results are in line with existing literature, where physiotherapists have reported difficulty in identifying and assessing psychosocial factors that may impact patient care, including their emotional status, expectations, and thoughts about health (Abrandt Dahlgren, Valeskog, Johansson, & Edelbring 2021; Jones & Rivett, 2019; Wilesmith et al., 2020). When compared to more experienced colleagues, recent studies have reported that novice physiotherapists have a lower perceived ability to address and manage patient-related barriers (Balluchi et al., 2021; Forbes, Mandruziak, et al., 2017; Svavarsdóttir et al., 2016), which may be related to greater difficulty in controlling the clinical setting and minimizing distractions to focus on the patient educational skills. According to the transition shock theory, proposed by Duchscher (2008), it was expected that the participating new-graduate physiotherapists (<one year of practice) would report greater difficulties regarding patient education self-efficacy levels compared to participants with more than one year of practice. Surprisingly, our results showed no statistically significant differences between the two subgroups; however, further research is needed to explore specific perceived barriers and challenges for patient education within new-graduates physiotherapists (<one year of practice). Moreover, the results of this study suggest that novice physiotherapists may view the patient and their characteristics as primarily responsible for the success or failure of education.

Consistent with previous studies, this finding may have implications for the training of physiotherapists in this area, where a specific focus is needed on developing practical skills and self-efficacy to identify and overcome patient-related barriers that may hinder effective education (Forbes et al., 2017).

Physiotherapy education institutions, through their pre-professional curricula, aim to ensure that students acquire the necessary skills and level of preparedness for clinical practice. However, the transfer of the concepts of a patient-centred approach from the educational context to the clinical practice context is known to be challenging (Hojat et al., 2009). Part of this challenge can be explained by the difficulties in assessing and addressing the psychosocial factors that impact the presentation of clinical conditions. Despite being recognized as an essential dimension in a patient-centred approach, physiotherapy curricula are often less developed and structured in this area, compared to the assessment and management of the physical dimension of the patient's condition (Jones & Rivett, 2019). Interestingly, our findings indicate that more than 80% of survey participants report high levels of confidence to seek patient perceptions and concerns; however, the qualitative findings, highlight that, in Portugal, the development of physiotherapists' clinical reasoning is essentially related to structure and diagnosis, which may suggest that novice physiotherapists do not have all the necessary skills to achieve patient-centred education practice. Our findings demonstrate the need for improvement of curricula in physiotherapy, highlighting the integration and training of clinical reasoning and communication skills, associated with a biopsychosocial model, potentially through the use of experiential learning approaches such as simulation as supported in the literature (Forbes et al., 2017). The implementation of a patient-centred education focuses essentially on mutual collaboration between the physiotherapist and the patient, to promote shared decision-making regarding treatment (Cheng et al., 2016). In this way, the importance of a therapeutic relationship for effective patient education is recognized, and in the present study, novice physiotherapists highlight that trust and rapport with the patient can also be promoted through education. Our findings demonstrate that novice physiotherapists recognize the value of experiential learning and simulation in the acquisition of skills but consider that pre-professional training lacks

opportunities to develop these through contact with real patients, promoting a gap between the academic and practice contexts. The development of skills that enable the health professional to adopt patient-centred approaches is strongly recommended in the literature (Dwamena et al., 2012; Trullàs, Blay, Sarri, & Pujol, 2022), where training opportunities and performance feedback moments are emphasized for the development of self-efficacy in patient education area (Forbes et al., 2018b; Svavarsdóttir et al., 2016). Furthermore, previous studies have indicated that clinical placements are a major element of entry-level physiotherapy training, where students are provided with the opportunity to directly practice skills in clinical settings under the supervision of experienced therapists (Forbes et al., 2018b). This study's findings also demonstrate the recognized value for clinical placements, however, the participants highlighted that during these periods, patient education skills were mainly developed through observation, as within Portuguese context, patient education is not defined as a competence to be assessed. Thus, our findings may indicate the need for reflection about the inclusion of activities that promote these experiences, as they are linked with higher levels self-efficacy level for patient education practice within novice physiotherapists.

Finally, our findings may provide insights to emphasize workplace support for novice physiotherapists. As one of the three main sources that influence self-efficacy (Bandura, 1997), vicarious experiences are an important strategy to develop both self-efficacy and preparedness for patient education practice (Forbes et al., 2018b). As mentioned earlier, within the Portuguese context, novice physiotherapists start their professional activity without any formal support from more experienced physiotherapists. In the beginning of their professional life, they may be responsible for complex clinical conditions. This is similar to Australian context (Australian Physiotherapy Association [APA], 2016), but differs from other European countries such as the United Kingdom, where novice physiotherapists besides having supervision, do not follow complex clinical conditions in an initial period (CSP, 2019). Consistent with previous research, the current study corroborate that social support, opportunities for feedback and encouragement from colleagues are factors that positively influence self-efficacy and facilitate patient education practice, from the perspective of novice physiotherapists (Wilesmith et al., 2020). This is crucial as

providing such support through mentoring is likely to promote a safe transition to the workforce and is likely to aid patient safety and outcomes (Murray, Sundin, & Cope, 2018). Nevertheless, further research is needed to understand how training and workplace support may impact physiotherapy practice and associated patient outcomes.

4.2. Strengths and Limitations

The implementation of a mixed methods study allowed the integration of quantitative and qualitative data and the identification of relevant aspects of patient education practice, according to the perception of Portuguese novice physiotherapists. Investigator triangulation must be considered as a strength, as it enhances reliability and promotes reflexivity and consensus about the qualitative data, enhancing rigor and trustworthiness, minimizing the personal bias that it is inherent in qualitative research.

According to the type of study and its methodological phases, several limitations must be considered. A potential limitation may be related to the number of participants included, especially if this research's findings are considered in terms of generalizability. Thus, these results should be considered in terms of transferability, where the results can be transferred to contexts that may have some similarities with the context where the study was carried out (Korstjens & Moser, 2018). In order to achieve this criterion, some procedures were undertaken. For example, the description of the Portuguese context was presented as well as the characteristics of the participants and verbatim transcripts of the interviews to support the researchers' interpretations. Social desirability and response bias may be present if participants were motivated to answer survey items to what is expected instead of their reality. Another limitation of this study was the inexperience of the lead investigator, mainly in the implementation of the interviews, and thematic analysis process. However, to minimise this limitation, besides the skills training carried out, the strategy of investigator triangulation was used and an audit trail regarding the data analysis process was developed, which are described in the methodology chapter.

Furthermore, the “member checking” approach, which is also described in the methodology chapter, was also used in order to enhance the credibility of the present study. However, none of the participants provided feedback, and therefore the researchers' analysis was unchanged.

4.3. Future research

Considering that novice physiotherapists experience difficulties in overcoming barriers to patient education, it is recommended that future research attempt to understand how training can increase their preparedness to implement patient education.

The present study explored only self-reported practices of physiotherapists, so it is not possible to report actual clinical behaviors of novice physiotherapists. Observation of physiotherapists' clinical practice is warranted to address how self-efficacy and perceived preparedness influence clinical practice behaviors.

Further research focused on novices' with less than one year of practice focusing their perceived preparedness for patient education would be beneficial, regarding their specific challenges present in the transition from student to professional context.

5. Conclusion

This study has provided an exploration of the self-efficacy and perceived preparedness for a patient education practice by Portuguese novice physiotherapists. This work aimed to provide a consistent step towards understanding novice physiotherapists' perceptions about their pre-professional training and subsequent impact on their patient education practice.

Patient education is essential to physiotherapy practice and recognized as a competency required for entry-level clinical practice. The current study demonstrates that Portuguese novice physiotherapists have high self-efficacy and perceived preparedness for most aspects regarding patient education practice. However, they are faced by perceived barriers that impacts the effectiveness of their practice, which may reflect a gap between their intentions and the outcome. Specifically, they are challenged to manage patient-related barriers, such as communication, attitudes towards physiotherapy, and pre-existing beliefs.

Novice physiotherapists within the current study highlighted the important role of direct clinical practice experiences in developing their patient education skills which should be considered by training providers. These findings emphasize that novice physiotherapists may need additional training to manage and overcome perceived barriers and may promote reflection regarding training practices within Portuguese context.

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Appendices

Appendix A. Ethics Committee Approval



COMISSÃO ESPECIALIZADA DE ÉTICA EM INVESTIGAÇÃO

Parecer 82/PA/2021

SOLICITAÇÃO

Pedido de parecer à Comissão Especializada de Ética para Investigação da ESS-IPS pelo Fisioterapeuta Diogo Santos, estudante do Mestrado em Fisioterapia em Condições Músculo-esqueléticas que resulta da parceria entre a Escola Superior de Saúde do IPS, a NOVA Medical School/Faculdade de Ciências Médicas (NMS/FCM) e a Escola Nacional de Saúde Pública da Universidade Nova de Lisboa referente a estudo denominado “Auto-eficácia e preparação dos fisioterapeutas portugueses para a implementação de educação, enquanto modalidade terapêutica utilizada no tratamento em utentes com condições músculo-esqueléticas: estudo de métodos mistos”. É um projeto sob orientação científica da Professora Doutora Cármen Caeiro da Escola Superior de Saúde do Instituto Politécnico de Setúbal e como Coorientadora a Professora Doutora Roma Forbes, da Escola de Ciências da Saúde e Reabilitação, da Universidade de Queensland, na Austrália.

DOCUMENTAL

1. Requerimento do parecer;
2. CV do Investigador Principal;
3. Dossier de Investigação, contemplando: sinopse do estudo; cronograma; referências bibliográficas; instrumentos de colheita de dados; documentos referentes ao processo metodológico para tradução/ retroversão, incluindo pedidos de colaboração (tradutor/retrotradutor/perito), avaliação/caraterização dos elementos do painel de peritos, questionário para participantes do estudo piloto; carta explicativa; consentimento informado.

ANÁLISE E PARECER

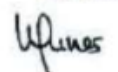
1. O objetivo deste estudo misto é examinar a autoeficácia dos novos fisioterapeutas portugueses para a prática de ensino de pacientes e explorar a forma como a sua apreciação desta competência profissional pode ser influenciada pela formação pré-profissional. Este

trabalho inclui o sub-estudo da tradução e adaptação da *Patient Education Self-efficacy Scale (PESES)* através do estudo da sua fiabilidade e validade de constructo.

2. Os participantes para este estudo devem ser fisioterapeutas portuguesas com 5 anos ou menos de prática profissional que concluíram a licenciatura em fisioterapia em Portugal e que trabalham com pessoas com doenças músculo-esqueléticas, pelo menos 80% do seu tempo de trabalho. O recrutamento dos participantes será feito por email, em Instituições de ensino superior nacionais e na Associação Portuguesa de Fisioterapeutas (AFP), procurando ter uma amostra de conveniência com 100 e 120 participantes.
3. Os instrumentos de colheita de dados correspondem a duas fases uma quantitativa e outra qualitativa. Na abordagem quantitativa será aplicado um questionário (escala de *Patient Education Self-efficacy Scale, PESES*) que permite explorar a autoeficácia dos profissionais em relação à prática de ensino dos utentes. O instrumento a utilizar será primeiramente alvo de tradução e adaptação cultural para a língua portuguesa e os dados serão tratados com o Software SPSS que permitirá obter estatística descritiva e distribuições de frequências para os dados demográficos e multivariada e inferencial para os outros dados a serem analisados (género, contexto profissional, académico, anos de prática, contrato prévio com o tema de educação dos utentes, quer em termos de Educação Básica quer de experiência clínica). Na abordagem qualitativa será utilizada a entrevista semiestruturada que permitirá aos participantes expor as suas experiências e opiniões sobre o tema da investigação e permitirá desenvolver uma análise temática. Os participantes nesta fase correspondem a um subconjunto dos participantes totais. Serão escolhidos aleatoriamente 15 participantes que serão contactados por email. À falta de resposta, far-se-á uma seleção aleatória.
4. Apresenta Carta explicativa e formulário de consentimento informado, para o sub-estudo da tradução do instrumento de avaliação e para o sub-estudo sobre as competências do ensino a pacientes pelo jovem fisioterapeuta. Todos os documentos apresentam informação detalhada aos participantes, sobre os aspetos que a CEEI considera serem de acautelar.

Considera-se que o estudo preenche os requisitos éticos, com preocupações relativas à proteção dos direitos dos participantes do estudo, pelo que se emite parecer favorável.

26 outubro 2021

P'la CEEI


Appendix B. Patient Education Self-Efficacy Scale (PESES)

Patient Education Competency Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I understand the role of patient education					
I understand the impact of social, cultural, and behavioral variables on patient learning					
I understand the principles of adult learning					
I feel confident to use questioning to seek the patient's perceptions and concerns about their condition					
I feel confident to obtain information from the patient assessment to understand their learning needs					
I feel confident to use reflective questioning (questions that allow the patient to reflect out loud)					
I feel confident to select and use a range of appropriate learning content tailored to the patient					
I feel confident to explain the patient's condition to them					
I feel confident to use shared decision-making					
I feel confident to provide self-management strategies to the patient and reinforce their ability to manage					
I feel confident to provide family or caregivers with information (where they are present)					
I feel confident to tailor communication styles, language, and materials to the patient					
I feel confident to control attention and engagement when educating the patient					
I feel confident to provide education content that is in the best interests of the patient					
I feel confident to recognise and effectively manage barriers to effective education					
I feel confident to summarise information for the patient					

I feel confident to integrate evidence-based practice into patient education					
I feel confident to identify when patient learning has been achieved through evaluation					
I feel confident to review progress of the patient's learning					
I feel confident to provide patient education within the limits of my practice and refer on to another professional where appropriate					
I feel confident to take action to continue to develop my patient education skills (professional development)					

* Forbes, R., & Mandrusiak, A. (2018). Development and Reliability Testing of a Patient Education Performance Tool for Physical Therapy Students. *Journal of Physical Therapy Education*, 33(1), 64–69. <https://doi.org/10.1097/jte.000000000000074>

Appendix C. Patient Education Self-Efficacy Survey

Consentimento Informado

Por favor, leia com atenção a seguinte informação. Se achar que algo está incorreto ou que não está claro, não hesite em solicitar mais informações.

Título do Projeto: Portuguese physiotherapists' self-efficacy and preparedness for patient education practice: a mixed methods study

Título do Projeto (em português): Auto-eficácia e preparação dos fisioterapeutas portugueses para implementação de educação, enquanto modalidade terapêutica utilizada no tratamento em utentes com condições músculo-esqueléticas: estudo de métodos mistos

Investigador Principal/Responsável pelo Projeto

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Declaro que aceito participar no estudo sobre a auto-eficácia e preparação de fisioterapeutas portuguesas recém-licenciadas para a implementação de educação, enquanto modalidade terapêutica utilizada no tratamento de utentes com condições músculo-esqueléticas. Este estudo enquadra-se na Unidade Curricular de Trabalho de Projeto do 2º ano do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas lecionado em parceria pela Escola Superior de Saúde do Instituto Politécnico de Setúbal (ESS-IPS), pela NOVA Medical School/

Faculdade de Ciências Médicas (NMS/FCM) e pela Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL).

Li e compreendi a ficha informativa. Foram-me explicados o objectivo e procedimentos envolvidos no estudo. As minhas questões foram esclarecidas de forma satisfatória.

Compreendi que a minha participação é voluntária e que sou livre de abandoná-lo em qualquer momento, sem qualquer consequência, prejuízo e sem necessidade de justificação.

Sei que a informação referente à minha identificação pessoal será mantida anónima e confidencial, sendo armazenada em local seguro e apenas manuseada pelos investigadores deste estudo e utilizada para fins de investigação.

Declaro que aceito participar.

Dados Sociodemográficos

1. Idade: _____

2. Género: M F

3. Qual a sua escola de formação base?

Escola	
Instituto Politécnico de Castelo Branco – Escola Superior de Saúde Dr. Lopes Dias	
Instituto Politécnico de Coimbra – Escola Superior de Tecnologia da Saúde de Coimbra	
Instituto Politécnico de Leiria – Escola Superior de Saúde	
Instituto Politécnico de Lisboa – Escola Superior de Tecnologia da Saúde de Lisboa	
Instituto Politécnico de Setúbal – Escola Superior de Saúde	
Instituto Politécnico do Porto – Escola Superior de Saúde	
Universidade de Aveiro – Escola Superior de Saúde de Aveiro	
CESPU – Instituto Politécnico de Saúde do Norte – Escola Superior de Saúde do Vale do Ave	

CESPU – Instituto Politécnico de Saúde do Norte – Escola Superior de Saúde do Vale do Sousa	
Escola Superior de Saúde Atlântica	
Escola Superior de Saúde da Cruz Vermelha	
Escola Superior de Saúde de Santa Maria	
Escola Superior de Saúde de Alcoitão	
Escola Superior de Saúde Egas Moniz	
Escola Superior de Saúde Jean Piaget – Algarve	
Escola Superior de Saúde Jean Piaget de Vila Nova de Gaia	
Escola Superior de Saúde Jean Piaget de Viseu	
Instituto Superior de Saúde do Alto Ave	
Universidade Fernando Pessoa – Escola Superior de Saúde	

4. Experiência profissional

- <1 ano
- 1 – 2 anos
- 2 – 3 anos
- 3 – 4 anos
- 4 – 5 anos

5. Local(ais) de prática clínica

- Hospital
- Clínica de Fisioterapia
- Gabinete Privado
- Serviços domiciliários
- Outro

5.1. Se selecionou mais do que um setor, indique, por favor, aquele em qual exerce predominantemente: _____

5.2. Se respondeu Outro, indique, por favor, qual:

6. Setor de Prática Clínica

- Público
- Privado
- Convencionado
- Misto

6.1. Se seleccionou mais do que um setor, indique, por favor, aquele em qual exerce predominantemente: _____

7. Contexto de Prática Clínica

- Sozinho
- Equipa (com outros Fisioterapeutas)
- Equipa Multidisciplinar
- Outro

7.1. Se respondeu Outro, indique, por favor, qual:

Ao longo das próximas questões será falado em “Educação”. De seguida apresentamos uma definição para clarificar o conceito e facilitar a sua compreensão, assim como exemplos de atividades comumente utilizadas.

“A educação do paciente é uma experiência de aprendizagem planeada, que usa uma combinação de métodos como o ensino, aconselhamento e técnicas de mudança comportamental, que influenciam o conhecimento e o comportamento de saúde do utente.” (Barlett, 1985).

Actividades como fornecer informação verbal ou escrita necessária para um programa de exercícios básico e aconselhar ou ensinar estratégias de autogestão da condição podem servir de exemplo para a implementação de educação neste contexto.

8. Durante a sua formação base foram abordados conceitos relacionados com a educação, enquanto modalidade terapêutica utilizada no tratamento de utentes com condições músculo-esqueléticas?

- Sim Não

8.1. Se respondeu Sim, qual(is) a(s) estratégia(s) utilizadas?

- Aulas teóricas
- Discussão de casos
- Simulação de casos
- Outra(s)

8.1.1. Se respondeu Outra(s), indique, por favor, qual(is):

9. De acordo com a sua experiência clínica em contexto académico, de que forma a mesma contribui para o desenvolvimento de competências para a implementação de educação, enquanto modalidade terapêutica para tratamento de utentes com condições músculo-esqueléticas?

- Acompanhamento de utente(s) em estágios curriculares
- Observação direta de outros fisioterapeutas
- Observação direta de outros profissionais de saúde
- Outro(s)

9.1. Se respondeu Outro(s), indique, por favor, qual(is):

10. De acordo com a sua prática clínica atual, com que frequência utiliza estratégias de educação (por exemplo: panfletos, demonstração de exercícios/movimentos/atividades, fotografias/vídeos, feedback verbal)?

- Nunca
- Raramente
- Ocasionalmente
- Frequentemente
- Sempre

Escala de Auto-eficácia na Educação ao Utente

Para efeitos do preenchimento deste instrumento, entende-se como educação *“uma experiência de aprendizagem planeada, que usa uma combinação de métodos como o ensino, aconselhamento e técnicas de mudança*

comportamental, que influenciam o conhecimento e o comportamento de saúde do utente” (Barlett, 1985, pág. 323-324), e como auto-eficácia a crença ou confiança que uma pessoa tem na sua própria capacidade para completar uma determinada tarefa ou resolver um problema (Bandura, 1977).

11. Por favor, pontue as afirmações de acordo com o seguinte nível de concordância:

Itens	Discordo totalmente	Discordo	Não concordo nem discordo	Concordo	Concordo totalmente
1. Compreendo o papel da educação ao utente					
2. Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente					
3. Compreendo os princípios da aprendizagem do adulto					
4. Sinto-me confiante em colocar questões para obter as perceções e preocupações do utente acerca da sua condição					
5. Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação					
6. Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)					
7. Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente					
8. Sinto-me confiante em explicar ao utente a sua condição					
9. Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente					
10. Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição					
11. Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).					
12. Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente					
13. Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação					

14. Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.					
15. Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação					
16. Sinto-me confiante em resumir informação para o utente					
17. Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente					
18. Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação					
19. Sinto-me confiante em rever o progresso da aprendizagem do utente.					
20. Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado					
21. Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).					

Interesse Fase 2 - Entrevistas

12. Tenho interesse em ser contactado(a), via e-mail, no futuro, para eventual continuação de participação numa segunda fase deste estudo, que consistirá numa entrevista individual.

Sim Não

12.1. Se seleccionou Sim, Indique, por favor, o seu e-mail para posterior contacto:

Referenciação Participantes

13. Caso tenha interesse, no espaço abaixo, pode indicar 3 emails de colegas fisioterapeutas que cumpram os critérios de inclusão, de forma a serem contactados para participarem no estudo.

Obrigado pela sua colaboração!

Appendix D. Semi-structured interview script

1. Introdução

- a. Dar as boas-vindas e agradecer a disponibilidade para a entrevista;
- b. Apresentação do entrevistador;
- c. Enquadramento da entrevista, explicando os objetivos da mesma;
- d. Reforçar aspetos mencionados na carta explicativa do estudo, especialmente em relação à gravação e anonimato das informações recolhidas;
- e. Enquadrar o entrevistado em relação à educação, enquanto modalidade terapêutica utilizada no tratamento de utentes com condições músculo-esqueléticas, reforçando aspetos como o seu planeamento, estrutura e individualização às necessidades do utente;
- f. Informar o entrevistado que deve balizar o seu contexto de intervenção com utentes com condições músculo-esqueléticas, recorrendo a exemplos das 3 ou 4 condições clínicas mais comuns na sua prática (lombalgia, dor no ombro, osteoartrose, por exemplo).

2. Definição da educação ao utente

- Pode-me dizer qual o papel que a educação ao utente tem na sua prática clínica habitual?
- Quando considera todas as estratégias de intervenção que tem disponíveis, pode-me explicar onde é que a educação ao utente se enquadra como uma prioridade?
- Fale-me sobre o que significa para si, enquanto fisioterapeuta, uma educação ao utente efectiva;
- Pode-me descrever situações em que se sentiu confiante em adoptar uma prática de educação ao utente?
- Pode-me descrever situações em que é necessário educar o utente, mas em que se sente pouco preparado(a)?
- Existem barreiras para fornecer uma educação ao utente efectiva? Se sim, quais?

- Pode-me descrever as suas experiências ao ultrapassar essas barreiras para uma prática de educação ao utente?
- O que pensa que o(a) preparou para esta tarefa?
- Que aspectos considera como facilitadores do seu desempenho no contexto da educação ao utente?

3. Perguntas Secundárias (*probe questions*)

- O que pensa que o ajudou a tornar-se competente ou confiante nesta área?
- Como é que a sua formação profissional o preparou?
- Em que aspectos é que a sua formação poderia sido diferente de forma a melhorar a sua competência prática?
- Disse que se sentia confiante/competente para a educação ao utente. Quais as razões para se sentir assim?
- Disse que não se sentia preparado(a) para a educação ao utente. O que poderia ter sido feito para o(a) ajudar a sentir-se mais bem preparado(a)?

Appendix E. Audit Trail

Audit Trail

This audit trail provides a description of the procedures included during the analysis process.

The following procedures were carried out for each interview:

- 1. Transcription of interview recording;**
- 2. First reading of the transcript, highlighting the excerpts considered important and noting down the initial ideas;**
- 3. Second reading, with coding;**
- 4. Further reading with selection of the final codes that resulted from the discussion among researchers;**
- 5. Integration of coding in an excel file to facilitate the recording of the evolution of the analysis:** the figures below are parts of the tables, created in excel, representative of the analysis process that took place until the final codification, after discussion among researchers

THEMATIC ANALYSIS			
<p>Aims: to examine the self-efficacy of Portuguese novice physiotherapists for patient education practice and to explore how their perceived preparedness for this professional competency is influenced by pre-professional training</p>			
EXTRACTS FROM INTERVIEW 5	CODES	COLOR	OBSERVATIONS
<p>Ricardo: (...) eu acho que é uma das coisas mais importantes, especialmente no que toca à auto-gestão da condição por parte do utente (...) eu acho que é super importante que o utente tenha conhecimento do que tem, do que é que pode fazer para melhorar a sua condição e também quando estiver já bem, sem o problema, o que fazer para evitar que isso aconteça no futuro. (Ricardo, 5, 7-8;12-14)</p>	<p>Role of patient education - increase the patient's capacity for self-management</p>	Yellow	
<p>Ricardo: a primeira sessão é somente de avaliação e aí gosto sempre de educar o utente, porque tenho essa oportunidade não é, tenho tempo de avaliar e também tenho tempo para educar, explicar ao utente o que tem, o que é que deve fazer até à próxima sessão (...) (Ricardo, 5, 33-34)</p>	<p>Role of patient education - initial assessment as a priority to educate the person about their condition</p>		
<p>Ricardo: para mim, de um modo muito simplista, uma educação efetiva é quando eu consigo transmitir a minha mensagem ao utente, ou seja, ele percebe exatamente que tipo de lesão é que tem... (Ricardo, 5, 49-51)</p>	<p>Meaning of an effective patient education practice - increased knowledge about their condition</p>	Green	
<p>Ricardo: Também sabe o que deve fazer para melhorar e para recuperar da forma mais rápida possível e também de um, olhando para um modo mais de prevenção, também o que fazer não é, para evitar que volte a acontecer essa lesão ou outras lesões semelhantes da mesma natureza. (Ricardo, 5, 52-55)</p>	<p>Meaning of an effective patient education practice - increased knowledge about their condition</p>		
<p>Ricardo: Às vezes há situações, em termos de patologias, em que a própria definição da patologia não é bem consensual ou não é muito clara quando se toca aos mecanismos fisiológicos subjacentes e nessas alturas para mim é... é difícil. (Ricardo, 5, 56-58)</p>	<p>Factors that negatively influence the level of preparedness - lack of consensus about clinical conditions</p>	Orange	
<p>Ricardo: (...) quando estamos a falar de utentes em que a literacia em saúde não é... pronto, lá grande coisa não é... E assim sim, aí é mesmo difícil porque eu próprio tenho dificuldade em passar a mensagem sem estar a aplicar termos, grandes termos técnicos, que a pessoa perceba com facilidade. (Ricardo, 5, 82-85)</p>	<p>Factors that negatively influence the level of preparedness - tailoring the communication to the patient</p>		
<p>Ricardo: Outros utentes, que não estão tão dispostos a ouvir, ou que só querem que resolva o problema, portanto, também já não são pessoas que aceitam muito bem a educação, vêm muito a intervenção na fisioterapia como um carro a ir a um mecânico, portanto, colocamos lá o carro e não fazemos nada e a pessoa trata o carro e pronto, fica assim. Portanto, também nesses casos é mais difícil. (Ricardo, 5, 88-92)</p>	<p>Barriers for patient education practice - patient-related factors (interest for education)</p>	Red	

Figure. Example of the analysis process of interview 5

As data collection was carried out, the coding of the various interviews was reviewed, considering the new data that emerged throughout them. After the final analysis of the interviews and the set of codes that emerged from it, the following steps were carried out:

6. Combining codes into potential themes and sub-themes

The role of patient education	A priority through the entire rehabilitation process	1st session important to assess person's beliefs and thoughts
	Development of self-management capacity	Increase patients' knowledge about their condition
	A professional competence of physiotherapists	Recommended for MSK conditions Explaining treatment strategies
	Changing beliefs and thoughts Promote behaviour change	
Meaning of effective patient education	Behaviour change	Greater knowledge does not mean a change in behaviour Increased self-management capacity
	Changing patients' beliefs	
	Increased patient knowledge	
Difficulties to assess effectiveness of patient education	lack of objective measures	
	absence of follow-up moment	
The role of the bachelor's degree in the development of competencies for patient education practice	Clinical internships experiences	contact with others professionals
	structure-based clinical reasoning rather than a patient-centred approach	lack of recognition of the role of education lack of education to deal with uncertainty
	superficial approach to education	lack of training lack of education about communication strategies
Strategies to improve undergraduate curricular plan	patient education as a competence present during clinical internships	
	increase opportunity for training	role-plays targeted for patient education interaction with patients
	updating of educational content	education about pain education about exercise education about patient education parameters

Figure. Example of combination of codes into potential themes and sub-themes

7. **Review of the validity of the pre-selected themes and sub-themes in relation to the data set;**
8. **Definition and nomination of final themes and sub-themes:** after the previous procedures and respective discussion among researchers, the final themes and sub-themes were named and are presented in the following table.

Table. Themes and sub-themes

Themes	Sub-themes
1. Perspectives of patient education practice	1.1. Role of patient education
	1.2. Meaning of effective patient education
	1.3. Facilitators for patient education practice
2. Challenges around patient education practice	2.1. Barriers to patient education practice
	2.2. Difficulties to assess the effectiveness of patient education
	2.3. Strategies to overcome barriers
3. Preparedness for patient education practice	3.1. Factors that negatively influence the level of preparedness
	3.2. Factors that positively influence the level of preparedness
	3.3. Strategies to enhance preparedness
4. Reflections on pre-professional training	4.1. The role of a bachelor's degree in the development of competencies for patient education practice
	4.2. Strategies to improve undergraduate curricular plan

9. Organisation of extracts by themes and sub-themes: subsequently, the excerpts were distributed, in a new excel, by theme and sub-theme facilitating the writing the analysis of the excerpts.

10. Selection of extracts for use

11. Writing of the final report: During the writing of the final report there was a need to merge two subthemes that had been identified in theme 1 and in theme 3, to increase the coherence of the analysis. After discussion among researchers, the subthemes "Role of patient education" and "Meaning of effective patient education" into a single subtheme, which was named "Role of patient education"; the subthemes "strategies to enhance preparedness" and "factors that positively influence the level of preparedness" were also merged into a single subtheme, which was named "factors that positively influence the level of preparedness". The table below represents the final themes and sub-themes.

Table. Final themes and sub-themes

Themes	Sub-themes
1. Perspectives of patient education practice	1.1. Role of patient education
	1.2. Facilitators for patient education practice
2. Challenges around patient education practice	2.1. Barriers to patient education practice
	2.2. Difficulties to assess the effectiveness of patient education
	2.3. Strategies to overcome barriers
3. Preparedness for patient education practice	3.1. Factors that negatively influence the level of preparedness
	3.2. Factors that positively influence the level of preparedness
4. Reflections on pre-professional training	4.1. The role of the entry level program in the development of competencies for patient education practice
	4.2. Strategies that may improve entry-level preparedness for patient education

Appendix F. Reflexive Diary

TREINO DE COMPETÊNCIAS	
APRECIÇÃO GERAL	ESTRATÉGIAS DE MELHORIA
1ª Entrevista (5/5/2022)	
<p>De uma forma geral, considero que correu melhor do que eu estava à espera.</p> <p>Senti que estive muito “agarrado” à visualização guião, uma vez que não tive o tempo desejado para estudar em detalhe. No entanto, terminei com a sensação de que fui conseguindo acompanhar as respostas do entrevistado e dar um seguimento lógico à conversa, com base nas perguntas previamente delineadas.</p> <p>Senti que algumas das respostas do participante não estavam totalmente enquadradas com o tópico em questão, mas também fiquei com a sensação de que talvez fossem as minhas expectativas prévias face a possíveis respostas que possam ter condicionado a forma como depois procuro redirecionar o participante para o tópico – e talvez isto não seja desejável.</p> <p>Considero que consegui adotar uma escuta ativa durante toda a entrevista, com capacidade para sumariar todos os aspetos referidos pelo participante.</p>	<p>Estudar e familiarizar-me melhor com o guião;</p> <p>Prestar maior atenção ao possível <i>delay</i> da Internet, evitando sobreposição de falas/voz durante a entrevista;</p> <p>Antecipar possíveis respostas aquando da preparação da entrevista, mas não permitir que elas influenciem a procura de determinada informação/tópico.</p> <p>Considero que há também espaço para melhorar a assertividade e clareza na formulação das questões.</p>
2ª Entrevista (9/5/2022)	
<p>Considero que esta entrevista foi muito mais desafiante do ponto de vista da sua condução, quer por características do entrevistado quer minhas.</p> <p>Comparativamente à 1ª, este treino foi realizado em horário pós-laboral, sendo que acusava já algum cansaço do dia de trabalho, que considero ter-se tornado evidente na condução da entrevista, onde por vezes considero ter sido pouco clarividente e assertivo. No entanto, penso que foi importante passar pela situação, uma vez que antecipo que seja algo que irá acontecer na fase das entrevistas, permitindo-me trabalhar em estratégias para mitigar o efeito da fadiga do dia de trabalho.</p>	<p>Verificar se todas as questões do guião são claras ou se necessitam de reformulações;</p> <p>Melhorar a assertividade e clareza na formulação das questões;</p>

<p>A gestão da entrevista tornou-se também exigente devido à forma como o entrevistado se expressava, tendo intervenções longas, mas repetitivas. Por vezes sentia que já não estava a acrescentar informação nova para o tópico, mas tornava-se difícil intervir para introduzir nova pergunta e sabia que não podia/devia interromper o entrevistado. Para lá disso, fiquei com a sensação de que este aspeto era também influenciado por uma reflexão momentânea que o entrevistado tinha no momento, tendo o próprio referido no final que já há algum tempo que não pensava sobre estas questões. De qualquer forma, considero ter sido também importante lidar com este tipo de participante, antecipando que poderá ser algo com o qual me poderei deparar nas entrevistas e dessa maneira poder trabalhar em estratégias para controlar a situação.</p> <p>Como aspetos positivos, identifico a abordagem de todos os tópicos relevantes dentro do período de tempo previamente previsto e a capacidade de escuta ativa (apesar do cansaço) e de retenção de a principal informação transmitida pelo entrevistado.</p>	
<p>3ª Entrevista (12/5/2022)</p>	
<p>Esta entrevista-treino caracterizou-se por ser uma entrevista mais rápida comparativamente às 2 anteriores. A entrevistada apresentou, na grande maioria, respostas diretas aos tópicos em questão, o que considero ter facilitado a recolha de informação e condução da entrevista.</p> <p>Considero que foi também enriquecedor para mim, para a preparação das entrevistas, antecipando que poderei deparar-me também com este tipo de entrevistados.</p> <p>Nesta 3ª entrevista já me senti mais confortável com a organização e seguimento do guião, considerando que a sequência das questões se manteve lógica tendo em conta a informação que a entrevistada ia transmitindo.</p> <p>Considero que a capacidade de escuta ativa e de sistematização da informação recolhida manteve-se como um aspeto positivo. No final da entrevista, a entrevistada deu um feedback específico em relação à pergunta “Quando considera todas as estratégias de intervenção que tem disponíveis, pode-me explicar onde é que a educação ao utente se enquadra como uma prioridade?”, sugerindo a troca do termo “onde” por “em que momento”. Penso ser um feedback útil, que merecerá a reformulação da questão, tornando-a mais clara e perceptível, uma vez que nas entrevistas anteriores, houve necessidade de clarificar a questão junto dos participantes.</p>	<p>Reformulação da questão “Quando considera todas as estratégias de intervenção que tem disponíveis, pode-me explicar onde é que a educação ao utente se enquadra como uma prioridade?”</p> <p>Melhorar a assertividade e clareza na formulação das questões.</p>

Para além disso, houve uma situação em que acabo por colocar duas questões em simultâneo, o que acabou por criar confusão junto da entrevistada no momento da resposta, sendo este um aspeto que deverá ser melhorado nas entrevistas futuras.

ENTREVISTAS	
APRECIÇÃO GERAL	ESTRATÉGIAS DE MELHORIA
1ª / 2ª / 3ª Entrevistas	
<p>Globalmente, considero que as entrevistas correram bem e que foram explorados todos os tópicos do tema em estudo.</p> <p>Apesar de me sentir confortável com o guião e moderação da entrevista, senti que o facto de o período entre a última entrevista-treino e a 1ª entrevista ter sido mais longo que o esperado, me deixou ligeiramente “enferrujado”. A própria entrevistada, pelo facto de terem tido um discurso mais curto e por vezes longos períodos de silêncio ou pausa dentro do mesmo, tornou mais exigente a condução da entrevista e ligação entre tópicos.</p> <p>Considero que a estratégia de analisar as respostas dadas pelos participantes na escala, na fase 1, e de introduzi-las durante a entrevista criando a sua relação com os tópicos a explorar, tem sido interessante no sentido de recolha de informação, considerando que tem sido útil para explorar as respostas dos participantes. No entanto, sinto que a clareza ao nível da comunicação desta informação e ligação com a questão deve ser melhorada.</p>	<p>Melhorar a assertividade e clareza na formulação das questões - +++ introdução de informação relacionada com as respostas à escala.</p>
4ª / 5ª / 6ª Entrevistas	
<p>Globalmente, considero que as entrevistas correram bem e que foram explorados todos os tópicos do tema em estudo.</p>	<p>Maior clareza na formulação das questões - +++ introdução de informação relacionada com as respostas à escala.</p>

<p>Uma particularidade destas 3 entrevistas foi o facto de os participantes entrevistados serem colegas que não conhecia ou com os quais não tinha tido qualquer contacto até então. Isto tornava-se um desafio à partida pelo facto de não saber, de todo, o que esperar do ponto de vista da comunicação dos mesmos e da capacidade de reflexão. De qualquer forma, considero que a condução da entrevista foi bem conseguida, mantendo como principais aspetos positivos a capacidade de escutar ativamente, sistematizar bem a informação recolhida e criar a ligação entre os diferentes tópicos a serem abordados.</p> <p>Considero também que começo a ser mais capaz de identificar e explorar alguns tópicos que são introduzidos pelos participantes e que não estejam especificamente definidos no guião, com o objetivo de enriquecer os dados obtidos.</p>	<p>Manter a capacidade de identificar e explorar aspetos que não estejam especificamente definidos no guião.</p> <p>Manter a capacidade de, em caso de necessidade, reformular a questão ou redirecionar o discurso do participante para o tópico em análise.</p>
<p>7ª / 8ª / 9ª Entrevistas</p>	
<p>Considero que um dos aspetos que sinto a ir melhorando ao longo das entrevistas, para lá daquilo que é o à-vontade com o guião, diz respeito ao à vontade com que me vou sentindo para colocar questões com o intuito de explorar e aprofundar tópicos pertinentes ao tema em estudo, mas que não estejam propriamente definidas no guião. Considero que este aspeto advém também da capacidade de escuta ativa e de atenção àquilo que é o discurso de cada entrevistado.</p> <p>No entanto, e devido ao facto de também já ter começado algumas transcrições, tenho refletido sobre algum prolongamento do meu discurso, que procurando sistematizar e resumir os aspetos referidos pelo participante e depois ainda colocar a questão, por vezes torna a minha intervenção um pouco longa, correndo o risco de o participante se “perder” naquilo que depois é a questão colocada.</p> <p>Considero que ao longo destas últimas entrevistas, foi-se tornando mais “natural” a integração e relação daquilo que foram as respostas dos participantes no questionário com aquilo que são os tópicos que o participante vai referindo ao longo da entrevista. De qualquer forma, sinto que por vezes a clareza da colocação da questão continua a ser um aspeto menos positivo.</p> <p>Outro aspeto que considero importante foi o facto de ir começando a introduzir e a relacionar alguns tópicos transversais que foram explorados por diferentes participantes nas entrevistas anteriores e que os participantes destas entrevistas mencionavam também. Considero que possa ter sido uma estratégia interessante não só para esclarecer algumas informações recolhidas, assim como para</p>	<p>Melhorar a capacidade de síntese nas minhas intervenções (resumo da informação do participante e colocação da questão)</p> <p>Manter a capacidade de identificar e explorar aspetos que não estejam especificamente definidos no guião</p>

<p>procurar ir comprovando a tendência que ia identificando em alguns tópicos, tendo em vista o critério da saturação de dados.</p>	
<p>10ª / 11ª / 12ª Entrevistas</p>	
<p>A 10ª e 11ª entrevistas tiveram a particularidade de terem sido realizadas à noite, após o dia de trabalho, onde já antecipava que existisse um maior nível de cansaço e que isso pudesse tornar mais desafiante a condução da entrevista e a própria capacidade de reflexão/discurso dos participantes, considerando que estes aspetos foram mais notórios na entrevista 11. No entanto, considero que a capacidade de escuta ativa e de abordagem dos tópicos principais em estudo foram alcançados, apesar de ter sentido uma maior dificuldade na estruturação do meu discurso.</p> <p>Um aspeto que tenho vindo a explorar nas últimas entrevistas e que considero que tem vindo a ser melhorado nestas últimas entrevistas tem sido a relação com alguns dados comuns introduzidos por outros participantes e onde identifico que o participante a ser entrevistado no momento vai também de encontro ao mesmo. Com o participante da entrevista 11 considero que foi uma estratégia útil no sentido de facilitar o processo de reflexão do mesmo.</p> <p>Um aspeto que sinto ter condicionado um pouco a realização destas últimas entrevistas foi também o facto de terem ocorrido em dias consecutivos, não dando muito espaço para “descansar” do papel de entrevistador e de reflexão sobre os dados recolhidos. No entanto, foi o agendamento possível face à minha disponibilidade assim como a dos participantes</p>	

Appendix G. Pilot study – Assessment of the questionnaire

1. Opinião geral sobre o instrumento

Leia atentamente cada questão e assinale com um X na resposta que achar apropriada.

1.	Na sua opinião as instruções foram claras?	Sim		Não	
	Se respondeu não, por favor indique o(s) motivo(s).				
2.	Considera que falta referir algum fator nas instruções?	Sim		Não	
	Se respondeu sim, por favor indique qual(is).				
3.	Acha que a linguagem utilizada (termos e palavras) no instrumento é de fácil compreensão?	Sim		Não	
	Se a resposta for não, por favor escreva qual(is) a(s) palavra(s) mais difícil(eis) de compreender e sugira outra palavra para a(s) substituir.				
	Palavra a substituir do questionário		Palavra substituta		
4.	Identifica alguma afirmação que seja pouco clara ou ambígua?	Sim		Não	
	Se respondeu sim, por favor indique o(s) motivo(s).				
5.	Sentiu dificuldade em selecionar uma opção de resposta devido à estrutura do questionário?	Sim		Não	
	Se respondeu sim, por favor indique o(s) motivo(s).				
6.	Considera o <i>layout</i> (Ex: formato, tipo e tamanho de letra, cores) das questões apropriado?	Sim		Não	
	Se respondeu não, por favor indique o(s) motivo(s).				
7.	Opôs-se a responder a alguma afirmação?	Sim		Não	

	Se respondeu sim, por favor indique o(s) motivo(s).			
8.	Deseja adicionar alguma sugestão ou comentário acerca do questionário?	Sim		Não
	Se respondeu sim, por favor indique a(s) o que deseja acrescentar			

2. Questões particulares acerca da versão portuguesa do instrumento *Patient Education Self-efficacy Scale*.

Se pretender particularizar alguma dificuldade de uma afirmação em específico pode fazê-lo através das questões indicadas nas seguintes tabelas:

Afirmação número: ____	
Teve dificuldade na compreensão da afirmação?	
De que forma a interpreta?	
Considera ser pertinente para a sua situação?	
Escreveria a afirmação de forma diferente?	
As opções de resposta estão coerentes com a afirmação?	
Outros comentários ou sugestões acerca da afirmação:	

Afirmação número: ____	
Teve dificuldade na compreensão da afirmação?	
De que forma a interpreta?	
Considera ser pertinente para a sua situação?	
Escreveria a afirmação de forma diferente?	
As opções de resposta estão coerentes com a afirmação?	
Outros comentários ou sugestões acerca da afirmação:	

Quanto tempo demorou a responder ao questionário? _____ minutos.

Obrigado pela sua colaboração!

Appendix H. Pilot study – Report

Pilot Study Report

A pilot study was conducted to analyse the construct validity of the previously translated instrument - the Patient Education Self-efficacy Scale. The pilot test also served to see if the online platform LimeSurvey was functioning as expected, to be used in the main study.

It was assessed, through a section of 8 questions (yes / no with comments). The survey was available for 2 weeks, since 21st of February to 7th of March of 2022.

The final year physiotherapy students of the School of Health of the Polytechnic Institute of Setúbal were invited in this phase. At the end of the expected period, 40 responses were received.

Table 1 – Questions and respective answers

Question	Answer “Yes”	Answer “No”
Q1. In your opinion were the instructions clear?	40	0
Q2. Is there anything missing from the instructions?	0	40
Q3. Do you think the instrument's language (terms and words) is easy to understand?	39	1
Q4. Do you identify any statements that are unclear or ambiguous?	37	3
Q5. Did you feel difficulty in selecting an answer option due to the structure of the questionnaire?	5	35
Q6. Do you consider the layout (e.g., format, font and font size, colours) of the questions appropriate?	40	0
Q7. Did you refuse to respond to any statement?	40	0
Q8. Would you like to add any suggestions or comments about the questionnaire?	3	37
Q9. How long did it take you to complete the questionnaire?	Times: 3, 5, 7, 8, 9, 10, 12, 15; Average: 8 minutes	

Table 2 – Analysis of answers

Question	Comment	Consideration
Q4	“In the first statement concerning the importance patient education, I was left in doubt as to whether the question was about the importance of the education level of the patient (level of knowledge about the condition, for example), or about the importance of educating the patient	This comment was based on an error by the researcher in writing the statement. It was written "educação do utente" instead of "educação ao utente", so changes have been made accordingly.

	(educating the patient about his condition, for example)	
	"I feel confident in controlling the patient's attention and engagement during education" - I found the statement unclear. What do you mean by controlling attention? I understood it to mean checking whether or not the patient had understood what had been said."	Lonely comment amongst the participants, not considered.
	"I would say that the first question could perhaps be clearer, for example, you understand the importance of education in an intervention with a patient"	Lonely comment amongst the participants, not considered.
Q5	<p>"The intermediate option being classified as "no opinion" left some doubts as I consider that I have an opinion on all items and often felt that I needed a trade-off between being or not being confident. Thus, the middle option was chosen only on the item that I have not yet had experience with and therefore have no notion whether I would feel confident in that situation."</p> <p>"In either question, I feel that there could be a need for an option, as the "no opinion" option would not be fully adequate"</p> <p>"One of the options indicates "no opinion". The fact that I can't choose between "agree" or "disagree" doesn't mean I have no opinion, but perhaps it more indicates that I'm undecided. I guess a way around it would be to give options of "tend to agree" or "tend to disagree"."</p> <p>"On some of the topics, the use of the term 'no opinion' does not fit in the best way – explaining - at some points, my view is that it is a halfway point rather than a lack of opinion"</p> <p>"There was no intermediate option between agree and</p>	All comments referred to the 'no opinion' answer option. The research team chose to change the option to a term suggested by the experts and frequently used in the Portuguese context - neither agree nor disagree (não concordo nem discordo)

	disagree other than no opinion”	
Q8	<p>“I suggest slight changes in the wording of some of the questions: In the 1st question, change "role" to "the importance" - I think this change can make the question clearer. In the 9th question, change 'in a shared way' to 'together' - simplify the sentence. In the last two questions, it is written "educação AO utente", whereas in the previous ones, when this particular expression appears, it is written "educação do utente". For the sake of consistency, I suggest changing the expression in the last questions from "ao" to "do.”</p>	<p>1st suggestion - lonely comment amongst the participants, not considered.</p> <p>2nd suggestion – lonely comment amongst the participants, not considered.</p> <p>3rd suggestion - This comment was based on an error by the researcher in writing the statement. It was written "educação do utente" instead of "educação ao utente", so changes have been made accordingly.</p>
	<p>“One suggestion would be to place the "No opinion" column after the "I totally agree" column, since being in the centre of the options, the current position, may be unintuitive. If it is in the centre, it may induce the person filling in the form to select this option due to the population's great tendency to select the central option, and thus, to select the "No Opinion" option.”</p>	<p>Lonely comment amongst the participants, not considered.</p>
	<p>“I just don't think the word "confident" will be the most appropriate for all questions. Sometimes it's not so much the issue of confidence alone that " messes up" a physiotherapist. Sometimes it is about the lack of skills/skills to manage or deal with a particular situation or challenge. So, I suggest putting " do you feel capable" rather than "do you feel confident". I think it is a broader term.”</p>	<p>Lonely comment amongst the participants, not considered.</p>

Appendix I. Portuguese version of Patient Education Self-Efficacy Scale

Escala de Auto-eficácia na Educação ao Utente

Para efeitos do preenchimento deste instrumento, entende-se como educação “*uma experiência de aprendizagem planeada, que usa uma combinação de métodos como o ensino, aconselhamento e técnicas de mudança comportamental, que influenciam o conhecimento e o comportamento de saúde do utente*” (Barlett, 1985, pág. 323-324), e como auto-eficácia a crença ou confiança que uma pessoa tem na sua própria capacidade para completar uma determinada tarefa ou resolver um problema (Bandura, 1977).

Por favor, pontue as afirmações de acordo com o seguinte nível de concordância:

	Discordo totalmente	Discordo	Não concordo nem discordo	Concordo	Concordo totalmente
1. Compreendo o papel da educação ao utente					
2. Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente					
3. Compreendo os princípios da aprendizagem do adulto					
4. Sinto-me confiante em colocar questões para obter as perceções e preocupações do utente acerca da sua condição.					
5. Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação					
6. Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)					
7. Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente					
8. Sinto-me confiante em explicar ao utente a sua condição					
9. Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente.					

10. Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição.					
11. Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).					
12. Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente					
13. Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação					
14. Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.					
15. Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação					
16. Sinto-me confiante em resumir informação para o utente					
17. Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente					
18. Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação					
19. Sinto-me confiante em rever o progresso da aprendizagem do utente.					
20. Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado					
21. Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).					

Obrigado pela sua colaboração!

Appendix J. Mann-Whitney tables

Mann-Whitney tables for gender, years of experience, and bachelor context.

Mann-Whitney Test - Gender

Postos

	Expertise	N	Posto Médio
Compreendo o papel da educação ao utente	Male	60	75,13
	Female	91	76,58
	Total	151	
Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	Male	60	70,08
	Female	91	79,91
	Total	151	
Compreendo os princípios da aprendizagem do adulto	Male	60	76,44
	Female	91	75,71
	Total	151	
Sinto-me confiante em colocar questões para obter as perceções e preocupações do utente acerca da sua condição	Male	60	76,72
	Female	91	75,53
	Total	151	
Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	Male	60	75,29
	Female	91	76,47
	Total	151	
Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	Male	60	81,03
	Female	91	72,69
	Total	151	
Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	Male	60	77,97
	Female	91	74,70
	Total	151	
Sinto-me confiante em explicar ao utente a sua condição	Male	60	80,89
	Female	91	72,77
	Total	151	
Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	Male	60	74,63
	Female	91	76,91
	Total	151	

Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	Male	60	77,13
	Female	91	75,25
	Total	151	
Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	Male	60	79,98
	Female	91	73,37
	Total	151	
Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente	Male	60	75,47
	Female	91	76,35
	Total	151	
Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	Male	60	80,58
	Female	91	72,98
	Total	151	
Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	Male	60	74,23
	Female	91	77,17
	Total	151	
Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	Male	60	79,18
	Female	91	73,90
	Total	151	
Sinto-me confiante em resumir informação para o utente	Male	60	78,63
	Female	91	74,26
	Total	151	
Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	Male	60	79,71
	Female	91	73,55
	Total	151	
Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	Male	60	74,67
	Female	91	76,88
	Total	151	
Sinto-me confiante em rever o progresso da aprendizagem do utente.	Male	60	70,98
	Female	91	79,31
	Total	151	
Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado	Male	60	76,28
	Female	91	75,81
	Total	151	

Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).	Male	60	79,37
	Female	91	73,78
	Total	151	

Estatísticas de teste^a

	Compreendo o papel da educação ao utente	Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	Compreendo os princípios da aprendizagem do adulto	Sinto-me confiante em colocar questões para obter as percepções e preocupações do utente acerca da sua condição
U de Mann-Whitney	2782,500	3085,500	2703,500	2687,000
Wilcoxon W	6968,500	7271,500	6889,500	6873,000
Z	,270	1,755	-,110	-,185
Significância Assint. (Bilateral)	,787	,079	,912	,853

Estatísticas de teste^a

	Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	Sinto-me confiante em explicar ao utente a sua condição
U de Mann-Whitney	2772,500	2428,500	2612,000	2436,500
Wilcoxon W	6958,500	6614,500	6798,000	6622,500
Z	,180	-1,220	-,480	-1,242
Significância Assint. (Bilateral)	,857	,223	,631	,214

Estatísticas de teste^a

	Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente
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U de Mann-Whitney	2812,500	2662,000	2491,000	2762,000
Wilcoxon W	6998,500	6848,000	6677,000	6948,000
Z	,364	-,292	-1,003	,134
Significância Assint. (Bilateral)	,716	,770	,316	,893

Estatísticas de teste^a

	Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	Sinto-me confiante em resumir informação para o utente
U de Mann-Whitney	2455,000	2836,500	2539,000	2572,000
Wilcoxon W	6641,000	7022,500	6725,000	6758,000
Z	-1,122	,434	-,779	-,683
Significância Assint. (Bilateral)	,262	,665	,436	,494

Estatísticas de teste^a

	Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	Sinto-me confiante em rever o progresso da aprendizagem do utente.	Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado
U de Mann-Whitney	2507,500	2810,000	3031,000	2713,000
Wilcoxon W	6693,500	6996,000	7217,000	6899,000
Z	-,916	,332	1,253	-,701
Significância Assint. (Bilateral)	,360	,740	,210	,943

Estatísticas de teste^a

	Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).	
U de Mann-Whitney		2528,000
Wilcoxon W		6714,000
Z		-,837
Significância Assint. (Bilateral)		,402

a. Variável de Agrupamento: Gender

Mann-Whitney Test – Years of experience

Postos

	Expertise	N	Posto Médio
Compreendo o papel da educação ao utente	<1 year	43	74,69
	>1 year	108	76,52
	Total	151	
Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	<1 year	43	78,94
	>1 year	108	74,83
	Total	151	
Compreendo os princípios da aprendizagem do adulto	<1 year	43	75,21
	>1 year	108	76,31
	Total	151	
Sinto-me confiante em colocar questões para obter as perceções e preocupações do utente acerca da sua condição	<1 year	43	85,62
	>1 year	108	72,17
	Total	151	
Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	<1 year	43	83,52
	>1 year	108	73,00
	Total	151	
Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	<1 year	43	71,30
	>1 year	108	77,87
	Total	151	
Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	<1 year	43	74,24
	>1 year	108	76,70
	Total	151	

Sinto-me confiante em explicar ao utente a sua condição	<1 year	43	74,86
	>1 year	108	76,45
	Total	151	
Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	<1 year	43	70,48
	>1 year	108	78,20
	Total	151	
Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	<1 year	43	78,72
	>1 year	108	74,92
	Total	151	
Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	<1 year	43	73,98
	>1 year	108	76,81
	Total	151	
Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente	<1 year	43	75,76
	>1 year	108	76,10
	Total	151	
Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	<1 year	43	74,36
	>1 year	108	76,65
	Total	151	
Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	<1 year	43	76,80
	>1 year	108	75,68
	Total	151	
Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	<1 year	43	80,67
	>1 year	108	74,14
	Total	151	
Sinto-me confiante em resumir informação para o utente	<1 year	43	71,40
		68	77,83
		151	
Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	>1 year	43	81,28
	<1 year	68	73,90
		151	
Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	>1 year	43	80,07
	<1 year	68	74,38
		151	
	>1 year	43	76,05

Sinto-me confiante em rever o progresso da aprendizagem do utente.	<1 year	68	75,98
		151	
Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado	>1 year	43	79,78
	<1 year	68	74,50
		151	
Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).	>1 year	43	81,00
	Total	68	74,01
	<1 year	151	

Estatísticas de teste^a

	Compreendo o papel da educação ao utente	Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	Compreendo os princípios da aprendizagem do adulto	Sinto-me confiante em colocar questões para obter as percepções e preocupações do utente acerca da sua condição
U de Mann-Whitney	2378,500	2195,500	2356,000	1908,500
Wilcoxon W	8264,500	8081,500	8242,000	7794,500
Z	,316	-,677	,153	-,931
Significância Assint. (Bilateral)	,752	,498	,878	,053

Estatísticas de teste^a

	Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	Sinto-me confiante em explicar ao utente a sua condição
U de Mann-Whitney	1998,500	2524,000	2397,500	2371,500
Wilcoxon W	7884,500	8410,000	8283,500	8257,000
Z	-,1485	,886	,333	,225
Significância Assint. (Bilateral)	,137	,376	,739	,822

Estatísticas de teste^a

	Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente
U de Mann-Whitney	2559,500	2205,000	2409,000	2332,500
Wilcoxon W	8445,500	8091,000	8295,000	8218,500
Z	1,135	-,545	,396	,048
Significância Assint. (Bilateral)	,257	,586	,692	,962

Estatísticas de teste^a

	Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	Sinto-me confiante em resumir informação para o utente
U de Mann-Whitney	2392,500	2287,500	2121,000	2520,000
Wilcoxon W	8278,500	8173,500	8007,000	8406,000
Z	,312	-,152	-,889	,928
Significância Assint. (Bilateral)	,755	,879	,374	,353

Estatísticas de teste^a

	Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	Sinto-me confiante em rever o progresso da aprendizagem do utente.	Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado
U de Mann-Whitney	2095,000	2147,000	2320,000	2159,500

Wilcoxon W	7981,000	8033,000	8206,000	8045,500
Z	-1,013	-,788	-,009	-,741
Significância Assint. (Bilateral)	,311	,431	,993	,459

Estatísticas de teste^a

	Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).
U de Mann-Whitney	2107,000
Wilcoxon W	7993,000
Z	-,966
Significância Assint. (Bilateral)	,334

a. Variável de Agrupamento: Years of Experience

Mann-Whitney Test – Bachelor context

Postos

	Expertise	N	Posto Médio
Compreendo o papel da educação ao utente	Public	110	75,47
	Private	41	77,43
	Total	151	
Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	Public	110	74,54
	Private	41	79,93
	Total	151	
Compreendo os princípios da aprendizagem do adulto	Public	110	75,78
	Private	41	76,59
	Total	151	
Sinto-me confiante em colocar questões para obter as perceções e preocupações do utente acerca da sua condição	Public	110	79,10
	Private	41	67,67
	Total	151	
Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	Public	110	78,38
	Private	41	69,61
	Total	151	
Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	Public	110	76,54
	Private	41	74,56
	Total	151	

Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	Public	110	76,53
	Private	41	74,59
	Total	151	
Sinto-me confiante em explicar ao utente a sua condição	Public	110	76,55
	Private	41	74,52
	Total	151	
Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	Public	110	75,23
	Private	41	78,06
	Total	151	
Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	Public	110	74,54
	Private	41	79,93
	Total	151	
Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	Public	110	75,47
	Private	41	77,41
	Total	151	
Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente	Public	110	77,50
	Private	41	71,96
	Total	151	
Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	Public	110	77,50
	Private	41	71,98
	Total	151	
Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	Public	110	75,88
	Private	41	76,33
	Total	151	
Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	Public	110	77,45
	Private	41	72,11
	Total	151	
Sinto-me confiante em resumir informação para o utente	Public	110	75,10
	Private	41	78,41
	Total	151	
Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	Public	110	75,85
	Private	41	76,41
	Total	151	
	Public	110	77,60

Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	Private	41	71,70
	Total	151	
Sinto-me confiante em rever o progresso da aprendizagem do utente.	Public	110	77,45
	Private	41	72,10
	Total	151	
Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado	Public	110	76,99
	Private	41	73,34
	Total	151	
Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).	Public	110	73,47
	Private	41	82,79
	Total	151	

Estatísticas de teste^a

	Compreendo o papel da educação ao utente	Compreendo o impacto de fatores sociais, culturais e comportamentais na aprendizagem do utente	Compreendo os princípios da aprendizagem do adulto	Sinto-me confiante em colocar questões para obter as percepções e preocupações do utente acerca da sua condição
U de Mann-Whitney	2313,500	2416,000	2279,000	1913,500
Wilcoxon W	3174,500	3277,000	3140,000	2774,500
Z	,332	,874	,110	-1,618
Significância Assint. (Bilateral)	,740	,382	,913	,106

Estatísticas de teste^a

	Sinto-me confiante em obter informação sobre as necessidades de educação do utente durante a avaliação	Sinto-me confiante em usar questões reflexivas (questões que permitam ao utente refletir em voz alta)	Sinto-me confiante em selecionar e usar uma variedade de conteúdos educativos personalizados para o utente	Sinto-me confiante em explicar ao utente a sua condição
U de Mann-Whitney	1993,000	2196,000	2197,000	2194,500
Wilcoxon W	2854,000	3057,000	3058,000	3055,500
Z	-1,221	-,263	-,260	-,282

Significância Assint. (Bilateral)	,222	,793	,795	,778
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Estatísticas de teste^a

	Sinto-me confiante em tomar decisões clínicas de forma partilhada com o utente	Sinto-me confiante em fornecer estratégias de autogestão ao utente e reforçar a sua capacidade de gerir a sua condição	Sinto-me confiante em dar informação a familiares ou cuidadores (se presentes).	Sinto-me confiante em personalizar os tipos de comunicação, linguagem e materiais ao utente
U de Mann-Whitney	2339,500	2416,000	2313,000	2089,500
Wilcoxon W	3200,500	3277,000	3174,000	2950,500
Z	,410	,761	,268	-,763
Significância Assint. (Bilateral)	,682	,446	,789	,445

Estatísticas de teste^a

	Sinto-me confiante em controlar a atenção e envolvimento do utente durante a educação	Sinto-me confiante em fornecer conteúdos educativos que sejam do melhor interesse do utente.	Sinto-me confiante em reconhecer e gerir de forma eficaz barreiras à efetividade da educação	Sinto-me confiante em resumir informação para o utente
U de Mann-Whitney	2090,000	2268,500	2095,500	2354,000
Wilcoxon W	2951,000	3129,500	2956,500	3215,000
Z	-,741	,060	-,716	,471
Significância Assint. (Bilateral)	,459	,952	,474	,638

Estatísticas de teste^a

	Sinto-me confiante em integrar uma prática informada pela evidência na educação ao utente	Sinto-me confiante em identificar quando a aprendizagem do utente foi alcançada, através da sua avaliação	Sinto-me confiante em rever o progresso da aprendizagem do utente.	Sinto-me confiante em realizar educação ao utente dentro dos limites da minha competência profissional e referenciar para outro profissional quando apropriado
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U de Mann-Whitney	2272,000	2078,500	2095,000	2146,000
Wilcoxon W	3133,000	2939,500	2956,000	3007,000
Z	,077	-,807	-,733	-,504
Significância Assint. (Bilateral)	,939	,420	,464	,614

Estatísticas de teste^a

	Sinto-me confiante em tomar a iniciativa de continuar a desenvolver as minhas competências na área da educação ao utente (desenvolvimento profissional).
U de Mann-Whitney	2533,500
Wilcoxon W	3394,500
Z	1,270
Significância Assint. (Bilateral)	,204

a. Variável de Agrupamento: Bachelor context

Appendix K. Compilation of excerpts not included in the results chapter

Theme 1. Perspectives of patient education practice

Sub-theme 1.1. Role of patient education

“(...) I think it is one of the most important aspects, especially when it comes to self-management of the condition by the patient (...) I think it is super important that the patient knows what he has, what he can do to improve his condition, and also when he is already feeling better, without any symptoms, what he can do to prevent the condition from manifesting itself in the future.” (Richard, I5, 7-8, 12-14)

“(...) education arises from the sense of trying to understand what may or may not speed up the recovery and trying to define it somehow and manage the treatment, not only regarding what I am going to apply, but also regarding what can be done outside the physiotherapy setting.” (Frederick, I12, 9-12)

“(...) the inclusion of these strategies throughout the treatment may also allow us to consolidate the knowledge that we convey to the patient and the patient may also become aware of some situations to which we bring their attention to (...)” (Sophie, I8, 119-122)

“(...) also how the patient puts it into practice. Because sometimes he understands everything and understands what I'm trying to tell him/her, but then the patient doesn't actually puts it into practice, or doesn't understand how to put it into practice in his/her daily life.” (Rachel, I9, 177-179)

Sub-theme 1.2. Facilitators for patient education practice

“In relation to the patient, if he is a communicative patient... so... friendly also that, again, has to do with that issue of health literacy, a patient who is open to new information (...)” (Richard, I5, 317-319)

“What I have seen is that those who manage to have a better relationship with the patients, manage to convey the important points or manage to have the necessary empathy, manage to communicate well, end up having better results because they convey more insight and sensations, and so on.” (Frederick, I12, 106-109)

“The team makes it easier in many aspects. On the issue of language, as I had mentioned, on the issue of transmitting knowledge and also sometimes on the issue of educating through empathy.” (Laura, I7, 301-303)

“In my practice, the biggest facilitator I have is time. Because I have... I have time... I have time.” (Rachel, I9, 426-427)

Theme 2. Challenges around patient education practice

Sub-theme 2.1. Barriers to patient education practice

"(...) I don't know if it's because of a lack of knowledge... I think it has a lot to do with previous experiences they've had, of going to the physiotherapist and the physiotherapist asking where you have pain - "do you have pain in your back? so lie down on your stomach and let's... let's check your back"." (Philip, I2, 129-132)

"I believe that patients who have already had many negative experiences from other interactions with other health professionals, I believe that these are factors that make it difficult, that can make the whole process of education difficult..." (Louis, I11, 196-199)

"I think that there is, that I also notice in my clinical setting, the language barrier. I have several patients of different nationalities, many of whom do not really speak Portuguese or English, languages in which I am fluent, and which end up being a barrier (...) If it is a patient with hearing problems, perhaps the message is not heard so well. Or if you have visual problems... I consider all these things to be barriers." (Laura, I7, 164-166, 171-173)

"Those that I consider mine are more related to the knowledge of the pathologies themselves." (Diana, 1, 109-110)

"If there is no knowledge that this tool exists, then it is an impediment to using this tool." (Laura, I7, 403-404)

"The barrier related to the physiotherapist I think has a lot to do with our knowledge and our communication, the way we communicate." (Nadia, I3, 232-234)

"(...) another question has more to do with my part... and I think it is something that is not worked on very much in the context of the course, is what is being talked about a lot now, the so-called soft skills, which I think are important, in fact, it is very important, because the physiotherapy profession is not only the technical part of putting your hand to the wheel, it has another relational part." (Frederick, I12, 102-106)

"In a space like ours, for example, where the patient is not in an isolated room, it is a barrier, not only for the patient to expose his/her problems, but sometimes for us to provide the education to the patient, because they are sharing a space with other people, sometimes the environment is too noisy or there are too many people passing by (...)" (Sophie, I8, 700-703)

"My own setting, if it is conventioned, it is also a barrier because the knowledge has to be conveyed very quickly, isn't it?." (Laura, I7, 173-175)

Sub-theme 2.2. Challenges to assess effectiveness of patient education

“How am I going to assess that? It's... the most I can assess is at the moment when I had those educational strategies, did the patient understand and are they then able to adjust their behaviours and apply that in their everyday life? I can even get an idea of that by trusting that the patient is telling me the truth and not... not saying that just because they know I want to hear that and to not address that matter.” (Philip, I2, 288-292)

“(...) if the patient really does that on a daily basis, we don't know, do we? But in fact he/she remembers or has retained that message we conveyed him/her and that is the only one I use in practice to see if the education was effective or not.” (Sophie, I8, 191-193)

Sub-theme 2.3. Strategies to overcome barriers

“Then, in my case, where I really feel that I have lack of knowledge there... that I notice that I need to study more or review questions... even talking again with... peer to peer...” (Diana, I1, 144-146)

“So, what I have adopted so far is reading. Reading some articles and some strategies that can be implemented, even on the issue of material resources.” (Sophie, I8, 533-535)

“(...) in the case of some musculoskeletal injury, I compare it with some part of a car and that you have to do this, so that the patient understands, when I feel that it is really going to be an effective approach.” (Richard, I5, 145-147)

“(...) sometimes in my clinical situation, in my clinical practice, patients come to us who "ah, the doctor told me to do physiotherapy" and... in these situations I don't immediately feel confident in educating the patient, perhaps because they don't show themselves available and this also takes away some of my confidence...” (Diana, I1, 51-55)

That is an important motivation, because if I see that the patient won't follow up on what I conveyed, I won't be... many times, I try to explain the importance of it, I convey it once or twice and then they don't do it, they tell me themselves... I don't give up, but... man, I try to implement that strategy or even implement other different strategies. And, normally, when he/she doesn't do it, she doesn't do it and that's it” (Henry, I6, 121-125)

Theme 3. Preparedness for patient education practice

Sub-theme 3.1. Factors that negatively influence level of preparedness

“(...) anything that is a chronic pathology, of a more chronic nature... lower back pain, cervical pain, shoulder tendinopathy... I think explaining the mechanism of chronic pain is very difficult for patients

to understand. Then, sometimes we start to explore that part and it seems that we are devaluing the pain, that pain is not important, that it... and patients get quite confused..." (Rachel, I9, 235-240)

"I think it's more knowing how to introduce it, how to apply it, how to plan an intervention, what topics to approach under certain conditions... (...) How to adapt the language, the terms, how to explain certain things without using those technical terms, that makes most people just stare at me and don't understand what I'm saying." (Rachel, I9, 16-17; 19-21)

Sub-theme 3.2. Factors that positively influence level of preparedness

"So, I work with several patients in the postoperative period of the shoulder and the fact that there is not much difference between pathologies in practice, ends up helping with these educational strategies, because patients are different but have some similarities, right? In the process that they are going to go through, in the evolution that is expected, in managing expectations, for example..." (Sophie, I8, 469-473)

"Besides going to study the condition more... talk to other colleagues who have already treated or had those cases, therefore, to have a clinical discussion between... inter-physiotherapists... and even with other... with doctors..." (Diana, I1, 63-66)

Theme 4. Reflections about pre-professional training

Sub-theme 4.1. The role of the entry-level program in the development of competencies for patient education practice

"(...) my personal perception is that during this training period, during those 4 years, we know the importance of educating the patient, but the way we explore it, I think we are only scratching the surface of this issue" (Louis, I11, 315-318)

"(...) and the training was a bit focused on that, whether of... you do a test to assess a certain structure to see if there is any restriction, whether in mobility, strength or pain, you do this test and you get a response and, regardless of the response, you then classify it. And I think that it doesn't always work... or it will work in such a linear way, so I think that earlier on we introduce this critical thinking in the student the better." (Nicholas, I10, 357-362)

Sub-theme 4.2. Strategies that may improve entry-level preparedness for patient education practice

"I think implementing this kind of simulation, but to a setting specifically focused on educating the patient, as an intervention, I think would be very useful. I think it's lacking or that it could be useful. Since the simulations are so integrated... interviews... i.e., trying to simulate as much as possible

what real practice is like in terms of so many other situations that are inherent to our clinical practice (...) (Louis, I12, 335-340)

“And I think that in our undergraduate course, we should address this issue more... more... what patient education is all about, how it should be provided, what should be addressed... And then also the communication strategies and behavioural changes.” (Rachel, I9, 311-313)

“I think that if, in the undergraduate training we increase, for example, the contact with patients, I think this is a factor that could be important.” (Henry, I6, 491-492)

“One thing that happens a lot is to recommend the patient to do exercises at home, maybe it would be interesting to train students from an early point, that is, the patient has that condition, sometimes we plan the treatment, but what about at home?” (Nicholas, I10, 449-452)

“When we proceed to the internships, this is a skill that has to be demanded of the students as interns, and it has to continue to be developed in some way, or, made available for those who show more interest in it, which currently is not.” (Sophie, I8, 283-285)

“I think that the shock afterwards with real patients you end up going back to zero... and maybe what you thought you were very good at, when you are with real patients you face reality and it seems that you no longer even know how to speak. In other words, I think that this contact with real patients is equally important (...) (Nicholas, I10, 425-428)